FORENSIC MEDICINE & TOXICOLOGY

Questions

1. **Which rule states that "A person is not criminally responsible, if at the time of committing the act, as a result of mental disease or defect lacked substantial capacity either to appreciate the wrongfulness of his conduct or to conform his conduct to the requirements of the law"?**
   A. McNaughten's rule
   B. Durham's rule
   C. Curren's rule
   D. American law Institute test

2. **The enquiry into the circumstances of death is called**
   A. Inquest report B. Corpus delecti
   C. Verdict D. Open verdict

3. **As per MCI rules, if any request is made for medical records, the documents shall be issued within the period of**
   A. 24 hours B. 48 hours
   C. 72 hours D. 96 hours

4. **One of the following may not amount to professional misconduct**
   A. Dichotomy B. Covering
   C. Advertisement D. Adultery

5. **Fingerprints are discovered by**
   A. Sir William J Herschel
   B. Sir Francis Galton
   C. Sir Edward Henry
   D. Sir Edmund Locard

6. **The growth of the beard is**
   A. 3 mm/week B. 0.4 mm/day
   C. 0.1 mm/day D. 0.2 mm/day

7. **As per the THOA 1994, The burden of proof to diagnose brainstem death rests on**
   A. Doctor in charge of the patient
   B. Doctor in charge of the hospital
   C. Independent specialist
   D. Specialist with Neurosciences

8. **Subpoena is a kind of**
   A. Designation
   B. Decomposed body tissue
   C. Court tribunal
   D. Document

9. **True about female pseudohermaphroditism**
   A. Nuclear sex is XY
   B. Testicular feminization
   C. Presence of testis
   D. Male form of external genitalia

10. **If a lady dies of unnatural and suspicious death within 7 years after her marriage, the inquest will be done by**
    A. Deputy Superintendent of police
    B. Forensic medical expert
    C. Coroner
    D. Sub-divisional Magistrate

11. **Lividity may be seen at the agonal period in case of**
    A. Influenza
    B. Cholera
    C. Starvation
    D. Malignant disease

12. **A patient suffering from a contagious disease should be treated**
    A. When he gives implied consent
    B. When he gives expressed consent
    C. When he gives written consent
    D. Even if he does not consent

13. **Angurugu syndrome is seen in case of poisoning by**
    A. Copper B. Manganese
    C. Cobalt D. Nickel

14. **Loco Parentis is about**
    A. Inheritance
    B. Consent
    C. Paternity dispute
    D. Maintenance to the child

1. d	2. a	3. c	4. c	5. a	6. b	7. d	8. d	9. d	10. d
11. b	12. d	13. b	14. b						

15. Samples for virological examination are preserved in
A. Liquid Nitrogen B. Toluene
C. Thymol D. Gycerol

16. After post-mortem, the body is handed over to
A. Coroner
B. Chief magistrate
C. The authority who has conducted inquest in that particular case
D. Nearby Police station

17. Who can consider as an expert witness
A. Medical man
B. Firearm expert
C. Chemical examiner
D. All of the above

18. Forensic Medicine deals with
A. Medical aspects of Law
B. Legal aspects of Medicine
C. Doctor - Patient, Doctor & State relationship
D. Doctor - Doctor relationship

19. The type of inquest never followed in India is
A. Police inquest
B. Magistrate's inquest
C. Coroner's inquest
D. Medical Examiner's system

20. The cause of death in hanging may be
A. Asphyxia
B. Cerebral anoxia
C. Fracture / dislocation of cervical vertebrae
D. Any of the above

21. Ewing postulates concerns with which of the following:
A. Growth at the site following trauma
B. Growth after a neurological injury
C. Age related changes in the teeth
D. Old seminal stains

22. In India, magistrate inquest is done in the following cases EXCEPT
A. Exhumation
B. Dowry deaths
C. Murder
D. Death of a person in police custody

23. Trial court for the offences committed by the children is
A. High court
B. Sessions court
C. Magistrate court
D. Juvenile court

24. The high court hass power to stay the execution of a pregnant woman according to which section of criminal procedure code?
A. 416 Cr.P.C B. 417 Cr.P.C
C. 418 Cr.P.C D. 419 Cr.P.C

25. A doctor is
A. A common witness
B. An expert witness
C. An ordinary witness
D. Both common and expert witness

26. A police can arrest a person without warrant in
A. Cognizable Offence
B. Non cognizable Offence
C. Summons Case
D. Warrant Case

27. Maximum punishment for issuing false certificate
A. 6 months B. 1 year
C. 3 years D. 7 years

28. The term 'Professional Death Sentence' denotes
A. Rigorous imprisonment
B. Death punishment
C. Severe warning to the RMP by the Medical Council
D. Permanent erasure of the name of the RMP from the Medical Register

29. Medical qualifications awarded by institutions outside India and recognized by MCI are registered in
A. Second schedule of Indian Medical Council Act 1956
B. First schedule of Indian Medical Council Act 1956
C. Part II of third schedule of Indian Medical Council Act 1956
D. Part I of third schedule of Indian Medical Council Act 1956

15. d	16. c	17. d	18. a	19. d	20. d	21. a	22. c	23. d	24. a
25. d	26. a	27. d	28. d	29. a					

30. **Repeated advertisement in newspaper by a medical practitioner is an example of**
A. Criminal negligence
B. Privileged communication
C. Infamous conduct
D. Civil negligence

31. **The sentence awarded by a court may be enhanced by the**
A. Magistrate court
B. High court
C. Higher court
D. All of the above

32. **According to Criminal law amendment act 2013, the minimum age of a girl to give valid consent for sexual intercourse is**
A. 16 years B. 18 years
C. 20 years D. 15 years

33. **Dying declaration can be received by**
A. Medical officer B. Lawyer
C. Police officer D. Any of the above

34. **Declaration of Oslo is related to**
A. Torture
B. Human Experiment
C. Therapeutic abortion
D. Hunger strike

35. **Criminal negligence is punishable under section 304A of IPC for a maximum imprisonment of**
A. 1 year B. 2 year
C. 3 year D. 5 year

36. **Finger printing finder involves recording prints of 8 fingers. Which finger pair is excluded?**
A. Ring finger B. Thumb
C. Little finger D. Middle finger

37. **Disciplinary control over Registered Medical Practitioners is under**
A. Director of Medical and Health Service
B. Health secretary of State Government
C. State Medical Council
D. Indian Medical Association

38. **After death all of following show rise in CSF except**
A. Lactic acid B. Amino acid
C. Urea D. Uric acid

39. **Criminal negligence is punishable under**
A. 337 IPC B. 338 IPC
C. 304A IPC D. All of the above

40. **Law of Tort deals with**
A. Traffic accidents
B. Civil wrong
C. Criminal wrong
D. Sexual assault

41. **Prominent early signs of cyanide poisoning include all EXCEPT**
A. Cyanosis
B. Hyperpnoea
C. Cherry red blood
D. Convulsions

42. **St. Anthony's fire refers to poisoning by?**
A. Ergot alkaloids
B. Aflatoxin
C. Calatropis Indica
D. Spanish fly

43. **Which of the following is not a principle of medical ethics**
A. Consent
B. Non-maleficence
C. Beneficence
D. Justice

44. **All the following are functions of State Medical Council EXCEPT**
A. Maintaining Medical register
B. Issuing Warning notice
C. Disciplinary control on Doctors
D. Recognition of Medical Qualifications

45. **The modernized versions of the Hippocratic Oath comprise the**
A. Declaration of Sydney
B. Declaration of Geneva
C. Declaration of Venice
D. Declaration of Istanbul

46. **In case of Hypothermia, shivering stops at**
A. 35°C B. 32°C
C. 30°C D. 27°C

30. c	31. c	32. b	33. d	34. c	35. b	36. c	37. c	38. c	39. d
40. b	41. a	42. a	43. a	44. d	45. b	46. b			

47. 'Non voluntary Euthanasia' means

A. At the will of the person
B. Person incapable of making their will
C. Against the will of the person
D. Against the will of the parents

48. A 19-year-old patient presented to the emergency with altered sensorium. A non-contrast CT revealed hydrocephalus, requiring urgent neurosurgical intervention. The patient had nobody accompanying him or any identity proof. Under which of these sections of Indian Penal code can the neurosurgeon perform the procedure without obtaining an informed consent from a guardian?

A. Section 87 B. Section 89
C. Section 90 D. Section 92

49. As per COPRA 1986, the maximum period to file a case after the knowledge of damage is

A. 90 Days B. 150 Days
C. 1 Year D. 2 Years

50. A farmer ingested some unknown poisonous seeds and had pain and vomiting. Soon he developed paralysis of his lower limbs which ascends till it affected the respiratory muscles and he died within two days. Identify the likely cause:

A. Strychnine nux-vomica
B. Conium masculatum
C. Semicarpus anacardium
D. Abrus precatorius

51. Hyperventilation before drowning is

A. Can cause delayed death
B. Can cause secondary drowning
C. Can cause immediate death
D. Does not alter the process of drowning

52. 'Baby-farmer' refers to

A. Child labourer
B. Child of a farmer
C. Farmer with small land
D. Children starved by their parents

53. Chilotic line is used to determine

A. Age B. Sex
C. Race D. Stature

54. Jamaica ginger (Jake) paralysis is due to contamination of Ethanol with

A. Organochlorine
B. Organophosphorus
C. Carbamates
D. Lead

55. Stature is measured by one of the following

A. Trotter and Glesser's Formula
B. Haase's rule
C. Gustafson's Method
D. Rule of 12

56. Best method of determine age up to 14 years is

A. Dentition
B. Ossification centres
C. Head circumference
D. Anthropometry

57. "Triage" is associated with

A. Poisoning
B. Firearm injury
C. Mass Casualties
D. Drowning

58. A lady is brought from village, unconscious, about 12 hours after ingesting some kind of unknown poison. Her heart rate is 103/min, blood pressure in 90/50 mm Hg and respiratory rate is 19/min. Her breath smells like kerosene. All of the following should be done in her management, except:

A. Gastric lavage should be done
B. Atropine should be administered till signs of recovery
C. Vasopressors should be administered intravenously
D. Immediate airway management

59. Fusion of xiphoid process occurs at

A. 20 years B. 30 years
C. 40 years D. 70 years

60. Second common pattern of finger printing is

A. Loops B. Arches
C. Whorls D. Composite

47. b	48. d	49. d	50. b	51. c	52. d	53. b	54. b	55. a	56. a
57. c	58. a	59. c	60. c						

61. Species identification is done by

A. Precipitin test
B. Neutron activation analysis
C. Spectroscopy
D. Benzidine test

62. Atavism is resemblance of features to

A. Mother
B. Father
C. Neighbour
D. Grandfather

63. One of the following hospital is not exempted from COPRA.

A. Government hospitals where services are rendered free of charge
B. Private hospitals where services are rendered free of charge to everybody
C. Hospitals with only a nominal registration fee
D. Hospitals where some patients are charged and some are not charged

64. The father of Modern Forensic Medicine is

A. Bernard Spilsbury
B. Mathieu Orfila
C. Paracelsus
D. Paolo Zacchia

65. Stain used for detection of ' Y ' chromosomes is

A. Fluorsecent in situ hybridization
B. Quinacrine dihydrochloride
C. Feulgen reaction
D. Acriflavin Schiff reagent

66. Which presentation is most indicative of possible child abuse?

A. Toddler with bruise and laceration on forehead, plus older bruise over shin, mother says he ran into a chair
B. 3 month old infant with bruise on right forearm and left buttock; parent states infant rolled off changing table
C. Mild scald burn with splash marks on trunk of 6 month infant; parent states she accidently spilled coffee
D. Bite mark in shoulder of 9 months with distance between canines about 2cm; father believes 2 year old brother has bitten recently.

67. If father's blood group is A and mother's blood group is B, the child's blood group will be

A. A only
B. B only
C. AB only
D. A, AB, B or O

68. 'Dry Submarine' in custodial torture injuries refer to -

A. Beating on soles of feet
B. Tying of a plastic bag over the head
C. Immersing head in contaminated water
D. Inserting heated metal skewer into anus

69. Edmund Locard is known for his

A. Formula for estimation of stature
B. Theory of exchange
C. System of personal identification using the body measurement
D. Finger print study

70. In case of bodies recovered from water, hypostasis is seen in all the parts EXCEPT

A. Head
B. Neck
C. Front of upper chest
D. Trunk

71. In acute starvation feeling of intense hunger lasts

A. 12-24 hours
B. 24-36 hours
C. 30-48 hours
D. 48-60 hours

72. True statement is

A. Minimum imprisonment for forced male homosexual sodomy is 7 years
B. Minimum imprisonment for forced heterosexual sodomy is 10 years
C. Minimum imprisonment for bestiality is 7 years
D. All of the above

73. Lower end of the femur can be help to determine the

A. Weight
B. Stature
C. Age
D. Height

74. Intraocular tension becomes nil after how many hours after death

A. 1
B. 2
C. 3
D. 4

61. a	62. d	63. d	64. a	65. b	66. b	67. d	68. b	69. b	70. d
71. c	72. b	73. c	74. b						

75. Ossification centre appearing at birth is

A. Upper end humerus
B. Scaphoid
C. Lower end of femur
D. Upper end of tibia

76. Which area of skull is prominent in female

A. Parietal
B. Occipital
C. Temporal
D. Supraorbital ridge

77. Closure of coronal sutures starts at age of

A. 10-15 years
B. 20-25 years
C. 30-35 years
D. 40-45 years

78. Oximes are contraindicated in?

A. Baygon
B. Tik-20
C. Malathion
D. Parathion

79. An arrested person who is accused of rape is brought to you at CHC for examination who is not willing to consent for the same. What should be done in this case?

A. Sent him back
B. Refer to District hospital
C. Use reasonable amount of force and examine
D. Ask the Investigating officer to get a court order

80. Pre-auricular sulcus helps in detection of

A. Sex
B. Age
C. Height
D. Race

81. In maceration which of the following statement is not true?

A. Foetus is flaccid
B. A sterile condition
C. Emits sweetish but disagreeable smell
D. Greenish discoloration

82. In blunt abdominal trauma, commonest site of GI rupture is

A. Stomach
B. Duodenum
C. Jejunum
D. Transverse colon

83. Prinsloo-Gorden artefact in cases of neck compression is seen

A. Beneath the esophagus
B. Beneath the Hyoid bone
C. Beneath the Ligature mark
D. Beneath the vertebra

84. Best specimen of bone for sex determination is

A. Pelvis
B. Femur
C. Mandible
D. Skull

85. A person fabricates a contusion with marking nut juice with an intension of false allegation on one of his enemies. He is punishable under IPC section

A. 191
B. 192
C. 193
D. 197

86. The fingerprint pattern may be impaired permanently in cases of

A. Scabies
B. Leprosy
C. Eczema
D. Scalds

87. Corporo-basal index is useful for determination of

A. Stature
B. Sex
C. Race
D. Age

88. Identical twins will not have same

A. Finger print pattern
B. DNA fingerprint pattern
C. HLA system
D. Blood group

89. 'Crural index' helps to differentiate

A Age
B Sex
C Race
D Stature

90. The most reliable bones for the purpose of medullary index are the following except

A. Radius
B. Sternum
C. Humerus
D. Tibia

91. Minimum air resulting in fatal air embolism is

A. 50 ml
B. 100 ml
C. 150 ml
D. 200 ml

92. Re-examination of a prosecution witness will be done by

A. Public Prosecutor
B. Defence Lawyer
C. Presiding Judge
D. Accused person

75. d	76. a	77. c	78. a	79. c	80. a	81. d	82. c	83. a	84. a
85. c	86. b	87. b	88. a	89. c	90. b	91. b	92. a		

93. The parameters used in Bertillon system are all EXCEPT

A. Descriptive data
B. Body measurements
C. Body marks
D. Finger prints

94. The parameter used to enlarge the photo to life size for superimposition in Ruxton's case is

A. Button B. Ear stud
C. Tiara D. Spectacle

95. A young adult came with casualty with history of some substance abuse. His pulse was 110 beats per minute, respiratory rate 30/min, blood gas analysis revealed metabolic acidosis, hypocalcemia and electrolyte imbalance. Blood urea – 100 mg/dl, creatinine – 3.4 mg/dl. Urine analysis showed calcium oxalate crystals. He improved on gastric lavage, ethanol, sodium bicarbonate, calcium gluconate and 4-methyl pyrazole. What is the substance he consumed?

A. Ethylene glycol B. Methyl alcohol
C. Formaldehyde D. Paraldehyde

96. What is the wrong statement about abrasion?

A. Involves superficial layers of skin alone
B. Caused by contact with a rough surface
C. Pointed object cannot cause it
D. Direction of application of force can be found out

97. Damage to whole skin is Dupuytren's

A. 2nd degree burns
B. 3rd degree burns
C. 4th degree burns
D. 5th degree burns

98. Number of Ossification centers at birth are

A. 806 B. 450
C. 406 D. 206

99. Professional secrecy is

A. Legal responsibility
B. Ethical responsibility
C. Social responsibility
D. Implied term of contract between doctor and patient

100. Height of a child at the age of 1 year is about

A. 50 cm B. 60 cm
C. 68 cm D. 100 cm

101. A person keeps a man under his power and threatens him to assault or cause harm without any intention to kill comes under which section of IPC?

A. 319 B. 320
C. 324 D. 351

102. The commonest heart defect in Turner's syndrome is

A. Bicuspid aortic valve
B. Coarctation of aorta
C. Septal defects
D. Aortic dissection

103. Early tooth eruption is seen in

A. Hypopituitarism
B. Syphilis
C. Rickets
D. Down's syndrome

104. A man fell from 35 feet height. Eye witnesses say that he fell on his feet. Which of the following injuries will confirm this fact?

A. Ring fracture + lumbar spine injury
B. Pond fracture + cervical spine injury
C. Comminuted fracture + cervical spine injury
D. Depressed fracture + cervical spine injury

105. The method of age estimation by height and weight of teeth is

A. Mile's method
B. Stack's method
C. Boyde's method
D. Lamendil's method

106. Up to how long after death can fluorescent dyes demonstrate Y chromosomes in the dental pulp in badly decomposed bodies?

A. 3 months B. 6 months
C. 9 months D. 12 months

93. d	94. c	95. a	96. c	97. c	98. b	99. d	100. c	101. d	102. a
103. b	104. a	105. b	106. d						

107. Minimum quantity of blood required to be preserved for chemical analysis is

A. 10 ml B. 2 ml
C. 100 ml D. 50 ml

108. Sexual intercourse by a husband with his wife during separation without wife's consent is punishable under Section

A. 376A of IPC B. 376B of IPC
C. 376C of IPC D. 376D of IPC

109. The weight required to constrict trachea in case of hanging is

A. 2 kg B. 4-5 kg
C. 15 kg D. 20 kg

110. The depth may be more than the length of the blade in case of stab wounds over the

A. Head B. Chest
C. Abdomen D. Limbs

111. An adult came to casualty with complaints of rapid heart rate. On examination everything else was normal except for episodic tachycardia and occasional extra systole and amblyopia. Which of the following is the cause of it?

A. Nicotine B. Cannabis
C. Atropine D. Cocaine

112. When an autopsy surgeon wants to send the maggots for examination, it should be preserved in

A. Sodium chloride
B. Rectified spirit
C. Acetic alcohol
D. Dimethyl sulphoxide

113. The ideal method to recognize latent tattoo in living is

A. Ultra violet light
B. Skin biopsy
C. Regional lymph node biopsy
D. Laser

114. Certain obligations on the part of doctor who under takes post-mortem examination are following except

A. The examination should be meticulous and complete
B. Routinely record all positive findings and important negative ones
C. He must keep the police informed about the findings
D. He must preserve viscera and send for toxicology examination in case of poisoning

115. Disclosure of the identity of the victim of rape is punishable under

A. Sec. 327(2) CrPC
B. Sec. 357(C) CrPC
C. Sec. 228(A) IPC
D. Sec. 166(B) IPC

116. First post-mortem was conducted in India is in

A. Kolkata B. Mumbai
C. Chennai D. Delhi

117. A 14-years-old rape victim was brought to the hospital with 22 weeks of pregnancy. All of the following are correct statements regarding the case, except:

A. Vaginal swab need not be taken
B. The fetus can be aborted after her consent
C. Examination can be done by a male doctor with a female attendant
D. Urine pregnancy test is not necessary

118. The best preservative for blood for culture is

A. EDTA
B. Heparin
C. Sodium flouride
D. Sodium polyanethole sulfonate

119. Least dispersion of pellets are seen in

A. Full choke B. ¾ choke
C. ½ choke D. ¼ choke

120. Regarding rugoscopy, all are true except

A. Palatoprints do not change during growth
B. Secondary rugae are 3-5mm
C. Palatal rugae are used as a method of identification
D. Primary rugae are less than 3mm

107. a	108. d	109. c	110. c	111. a	112. c	113. a	114. c	115. c	116. c
117. b	118. d	119. a	120. d						

121. Pyrogallol test helps to differentiate
A. Antemortem from postmortem burns
B. Air embolism from putrefactive gas
C. Joule from filigree burns
D. Postmortem from antemortem clots

122. Which of the following is NOT a feature of post-mortem clot?
A. Yellow chicken fat appearance
B. Adherence to the wall
C. Red currant jelly appearance
D. Friable

123. The amount of soil to be collected at the time of exhumation is about
A. 100 grams B. 250 grams
C. 400 grams D. 500 grams

124. Sexual arousal from enemas is known as
A. Agalmatophilia
B. Coprolagnia
C. Mysophilia
D. Klismaphilia

125. Atropine is not an antidote in:
A. Tik 20 B. Endrin
C. Baygon D. Parathion

126. The mode of death in case of CO poisoning is
A. Anoxic Anoxia
B. Anaemic Anoxia
C. Stagnant Anoxia
D. Histotoxic Anoxia

127. Post-mortem caloricity may be seen in all of the following causes of death except
A. Septicaemia
B. Barbiturates poisoning
C. Strychnine poisoning
D. Tetanus

128. Consumption of unripe Carambola can cause poisoning by
A. Salicylic acid
B. Formic acid
C. Oxalic acid
D. Boric acid

129. True about suspended animation
A. Common phenomenon in yogic person
B. Can be voluntary
C. Person can be revived
D. All of the above

130. Postmortem lividity is unlikely to develop in a case of
A. Drowning in a fast flowing river
B. Drowning in well
C. Drowning in chlorinated swimming pool.
D. Postmortem submersion

131. In a fetus nails reach the tip of the fingers at
A. 5th month B. 6th month
C. 7th month D. 8th month

132. Domain of ballistics concerned with forensic pathologist is
A. Interior
B. Exterior
C. Intermediate
D. Terminal

133. Putrefaction is delayed in case of
A. Infants
B. Arsenic poisoning
C. Old age
D. Athlets

134. Putrefactive gases are all except
A. CO_2 B. NO_2
C. H_2S D. NH_3

135. Pugilistic attitude is due to
A. Cadaveric spasm
B. Rigor mortis
C. Coagulation of protein
D. All of the above

136. One of the following can be given Only by oral route
A. DMSA B. DMPS
C. EDTA D. BAL

137. Immediate sign of death is
A. Fall in body temperature
B. Changes in eye
C. Changes in skin
D. Cessation of circulation and respiration

121. b	122. b	123. d	124. d	125. b	126. b	127. b	128. c	129. d	130. a
131. d	132. d	133. b	134. b	135. c	136. a	137. d			

138. 'Zasko' phenomenon' after death is in relation to

A. Mechanical stimulation
B. Chemical stimulation
C. Electrical stimulation
D. Thermal stimulation

139. Most common organ damaged in air blast injury is

A. Ear drum B. Lung
C. GIT D. Bones

140. For transplantation skin can be removed from dead up to

A. 6 hours B. 24 hours
C. 48 hours D. 72 hours

141. Following is not a stage of muscle changes after death

A. Primary flaccidity
B. Secondary flaccidity
C. Tertiary flaccidity
D. Rigidity

142. The onset of rigor mortis is early in case of

A. Pneumonia
B. Poliomyelitis
C. Strychnine poisoning
D. Arsenic poisoning

143. Deep inspiration above the water level may cause

A. Late floatation of the body
B. Late floatation of the body only in sea water
C. No effect on floatation of body
D. Early floatation of the body

144. Pseudocyesis is usually observed in

A. Childless wife nearing menopause
B. Males who are impotent to a particular woman
C. Unmarried woman in whom contraceptives has failed
D. Young married woman with illicit sexual relation with a colleague

145. 'Casper's dictum' helps in the determination of

A. Growth of foetus
B. Hair growth
C. Rate of cooling
D. Rate of putrefaction

146. Sub-dural haemorrhage is common in case of

A. Elderly people
B. Child abuse
C. Alcoholics
D. All of the above

147. Age of the fetus of weight 1000g, foot length 8cm, thick nails, opened eyelids, pupillary membrane disappeared, testis in external inguinal ring, crown rump length is 23cm is

A. 5 months B. 6 months
C. 7 months D. 8 months

148. In water, external putrefactive changes are first seen in

A. Face B. Chest
C. Upper limbs D. Abdomen

149. Antemortem abrasions can be confused with

A. Ant bite marks
B. Eczema
C. Joule burn
D. Chemical burn

150. On 4th day the colour of a bruise is

A. Red B. Green
C. Blue D. Brown

151. Deep blue hypostasis is seen in case of death by poisoning due to

A. Phosphorus
B. Nitrites
C. Aniline
D. Hydrogen sulphide

152. Which fracture may be seen in only young adults due to a blunt force impact

A. Diastatic B. Gutter
C. Pond D. Perforating

153. 'Lochia' is the discharge seen

A. After menstruation
B. During pregnancy
C. After delivery
D. During labour

138. a	139. a	140. b	141. c	142. c	143. c	144. a	145. d	146. d	147. c
148. a	149. a	150. d	151. c	152. a	153. c				

154. Age of a 15 year old female is best determined by the radiograph of

A. Upper end of radius and ulna
B. Lower end of radius and ulna
C. Upper end of humerus
D. Lower end of femur

155. Professional negligence is failure on the part of the doctor for

A. Wrong diagnosis
B. Wrong treatment
C. Absence of reasonable care
D. Refusal to accept a patient

156. Scab or crust of abrasion appears brownish black in

A. 12-24 hours
B. 2-3 days
C. 4-7 days
D. After one week

157. All of the following documents are accepted in the court without cross-examination EXCEPT

A. Chemical Examiner's report
B. Dying Declaration
C. Fingerprint expert's report
D. Medico-legal reports

158. One of the following is the first enzyme to be released at the site of wound

A. Aminopeptidase
B. Acid phoshatase
C. ATP-ase
D. Alkaline phosphatase

159. Fracture at C6 - C7 vertebrae is called

A. Hangman's fracture
B. Undertaker's fracture
C. Jefferson's fracture
D. Hinge fracture

160. All the following give rise to dimness of cornea before death EXCEPT

A. Uraemia
B. Narcotic Poisoning
C. Wasting Disease
D. Carbon Monoxide poisoning

161. The callus is visible on X-ray at

A. 1 week B. 2 weeks
C. 3 weeks D. 6-8 weeks

162. The fertilisation of two ova released at two different menstrual cycles refers to

A. Superfecundation
B. Superfoetation
C. Foetuspapyraceus
D. Fecundation ab extra

163. Which of the following is most characteristic of concussion

A. Pupillary constriction
B. Nausea, vomiting
C. Transient amnesia and unconsciousness
D. Rapid, shallow breathing

164. In head injury bleeding from middle ear is suggestive of fracture of

A. Anterior cranial fossa
B. Middle cranial fossa
C. Posterior cranial fossa
D. Vault of the skull

165. 'Sudden death' means, the maximum duration between onset of illness and death is less than

A. 3 hours B. 6 hours
C. 12 hours D. 24 hours

166. The cause for ring fracture is

A. Fall from height on feet
B. Fall of heavy object on the head
C. Blow on the chin
D. All of the above

167. Retraction ball necrosis is associated with

A. Cerebral Concussion
B. Commotio Cerebri
C. Stunning
D. Diffuse axonal injury

168. Commotio cordis is seen in

A. Infants B. Adolescents
C. Adults D. Old age

169. Telefona refers to?

A. Legs & thighs are tied tightly with bamboo sticks
B. Forced standing
C. Beating on both ears
D. Rolling a wooden/iron rod up & down the thighs

154. a	155. c	156. c	157. d	158. c	159. b	160. d	161. c	162. b	163. c
164. b	165. d	166. d	167. d	168. d	169. c				

170. In case of Decomposition of bone, the last amino acid to disappear is
A. Proline B. Hydroxy-Proline
C. Cysteine D. Glycine

171. Use of Wadding in a smooth bore gun produces all except
A. Optimum pressure
B. Sealing the air
C. Causes fatal injuries
D. Helps in lubrication

172. Which of the following tests is not used to detect the presence of primer metal components on the hands of an individual who fired the firearm?
A. Atomic Absorption Spectroscopy
B. Dermal nitrate test
C. Harrison and Gilroy test
D. Neutron activation analysis

173. Femur is ---------- % of the individual' height
A. 20 B. 22
C. 27 D. 35

174. Acid phosphatase activity of human semen in Bodansky units per ml is
A. 240 - 260 B. 300 - 320
C. 340 - 360 D. 380 – 400

175. Pari passu means
A. Guilty mind
B. Necessary changes having been made
C. Equal in all respects
D. Beyond the power

176. Motile spermatozoa found on a wet mount of vaginal secretions are indicative of intercourse within the past
A. 6 hours B. 12 hours
C. 24 hours D. 48 hours

177. One of the following is generally not a constituent of embalming fluid
A. Ethanol B. Methanol
C. Formalin D. Phenol

178. One of the following is not a feature of 'Triad of asphyxia'
A. Cyanosis
B. Increased fluidity of blood
C. Petechial hemorrhages
D. Visceral congestion & edema

179. Blackening and tattooing of skin and clothing can be best demonstrated by
A. Infrared photography
B. Luminol spray
C. Comparison microscope
D. Ultraviolet light

180. Open verdict in coroner's inquest means
A. Verdict made known to the accused
B. Judgement made public
C. Case is kept pending
D. Case decided on previous judgement

181. "Knock out drops" to render a person helpless in robbery is
A. Dhatura
B. Chloral Hydrate
C. Methaquolone
D. Barbiturates

182. Mental Health Act 1987 deals with such individuals, which are known as:
A. Lunatics B. Mad
C. Mentally ill D. Insane

183. Subpubic angle in females is
A. $<90^0$ B. 90^0-100^0
C. 100^0-110^0 D. $>110^0$

184. All are components of black powder EXCEPT
A. Charcoal
B. Lead peroxide
C. Potassium nitrate
D. Sulphur

185. MTP act was last modified in the year
A. 2000 B. 2003
C. 2005 D. 2007

186. Which of the following bullets leaves a visible mark, so that a person can see it.
A. Tracer Bullet
B. Explosive bullet
C. Incendiary Bullet
D. Gyrojet

170. d	171. c	172. b	173. c	174.c	175. c	176. b	177. a	178. b	179. a
180. c	181. b	182. c	183. b	184. b	185. b	186. a			

187. Smokeless gun powder is composed of
A. HCN
B. $KMnO_4$
C. Sulphur
D. Nitrocellulose

188. Bullet scrapings around the wound is known as
A. Smudging
B. Peppering
C. Fouling
D. Stippling

189. Judicial execution is carried out in
A. United Kingdom
B. Italy
C. USA
D. All of the above

190. In frost bite, skin becomes hard black in about
A. 7 Days
B. 3 days
C. 4-6 weeks
D. 2 weeks

191. After birth the umbilical cord falls in
A. 36-48 hours
B. 2-3 days
C. 5-6 days
D. 10-12 days

192. A doctor should not take fees for issuing the following
A. Certificate issued to a government employee
B. Certificate issued to a poor patient
C. Certificate issued to a psychiatric patient
D. Death certificate

193. A quack injects penicillin after giving test dose. But the patient dies of anaphylactic shock. The quack can defend on the grounds of
A. Therapeutic misadventure
B. Medical maloccurence
C. Novus actus intervenience
D. None of the above

194. Lightening flash can cause injury by all of the following, Except
A. Expanded and repelled air
B. Compressed air pushed in front of the current
C. Direct effect of electric current
D. Super-heated air

195. Yellow Poppy gives rise to
A. Epidemic Dropsy
B. Spastic Quadriplegia
C. Flashback Phenomenon
D. Bad Trip

196. Pink urine is seen in case of poisoning by
A. Nitric acid
B. Mercury
C. Carbolic acid
D. KMNO4

197. The type of the burn that is relatively painless is
A. Epidermal
B. Dermo-epidermal
C. Deep
D. None of the above

198. District Consumer Court can pass maximum compensation of
A. 5 Lakhs
B. 20 Lakhs
C. 50 Lakhs
D. 1 Crore

199. The causative electrode of electric injury can be identified by
A. Acro reaction
B. Current pearl
C. Bone pearls
D. Wax drippings

200. Doctrine of 'Res Ipsa Loquitur' can be applied in case of
A. Prescription of overdose
B. Complications in an operation
C. Failure to achieve total cure
D. None of the above

201. In both water and food are completely withheld to a person, death usually occurs in
A. 5 to 7 days
B. 10 to 12 days
C. 1 to 2 days
D. 2 to 4 days

202. Gettler's test is used in
A. Hanging
B. Strangulation
C. Drowning
D. Poisoning

203. Death in case of judicial hanging is because of
A. Occlusion of airway
B. Vasovagal shock
C. Coma
D. Fracture dislocation of upper cervical vertebra

187. d	188. c	189. c	190. d	191. c	192. d	193. d	194. b	195. a	196. b
197. c	198. b	199. a	200. a	201. b	202. c	203. d			

204. The test to know the presence of air in the stomach and intestine in autopsy on new born is known as

A. Hydrostatic test
B. Raygat's test
C. Breslau's first life test
D. Breslau's second life test

205. Rayalaseema phenomenon refers to

A. Back spatter
B. Insertion of bullet into stab wound
C. Surgical intervention of gunshot wound
D. Bullet retained in the body since a long time

206. The test in which weight of lungs is compared with body weight is

A. Ploucquet's Test
B. Fodere's Test
C. Wredin's Test
D. Static Test

207. The number of members in National Consumer Disputes Redressal Forum is

A. 3 B. 5
C. 7 D. 9

208. Karyotyping of foetus may be done from all of the following except

A. Monocyte B. Lymphocyte
C. Fibroblast D. Amniocyte

209. False Negative Hydrostatic test in a live born foetus may be seen in

A. Emphysema
B. Putrefaction
C. Atelectasis
D. Artificial Respiration

210. What is meant by 'Suppositions child'?

A. Child fictitiously claimed by a woman
B. Child born out of wedlock
C. Child is born after artificial insemination homologous
D. Second born of a twin pregnancy

211. In prenatal diagnostic technique Act 1994 which one of the following is not a ground for carrying out prenatal test?

A. History of two or more spontaneous abortion or fetal loss
B. Pregnant woman above 35 years of age
C. History of exposure to potentially teratogenic drugs
D. When fetal heart rate is 160 per min at fifth and 120 per min at ninth month

212. The definite signs of pregnancy include all of the following EXCEPT

A. Hearing the fetal heart sounds
B. Palpating the fetal parts
C. Positive HCG test
D. X-ray diagnosis

213. The term 'Affiliation cases' refer to

A. Legitimacy
B. Posthumous child
C. An orphan child
D. Suits for adoption

214. False accusation by adopted children of being mistreated by their adoptive mothers is known as

A. Battered baby syndrome
B. Shaken baby syndrome
C. Caffey's syndrome
D. Cinderella syndrome

215. For diagnosing brain stem death, which of the following tests must be done?

A. Apnoea test
B. Brain stem reflexes tests
C. Tests for irremediable structural brain damage
D. All of the above

216. Emmenagogues are the drugs which

A. Cause uterine contraction
B. Increase menstrual blood flow
C. Increase sweating
D. Cause vomiting

217. Sweating is not seen in

A. Heat stroke B. Heat cramps
C. Heat fatigue D. Heat syncope

204. d	205. b	206. a	207. b	208. a	209. c	210. a	211. d	212. c	213. d
214. d	215. d	216. b	217. a						

218. One of following type of burn injury is not seen in lightening

A. Spark burn
B. Filigree burn
C. Surface burn
D. Linear burn

219. Which is NOT a feature seen on the baby born of precipitate labour?

A. Intracranial haemorrhages
B. Pond fracture
C. Prominent caput succedaneum
D. Torn umbilical cord

220. Berlin's edema is associated with

A. Coup injury
B. Contrecoup injury
C. Cerebral concussion
D. Retinal injury

221. In which of the following shot gun the inner diameter of the barrel is widest?

A. 10 bore B. 12 bore
C. 14 bore D. 16 bore

222. The percentage of fetal haemoglobin at birth is

A. 94% B. 80%
C. 7-8% D. 0%

223. What is the most common cause of death in secondary drowning?

A. Electrolyte imbalance
B. Aspiration pneumonia
C. Cardiac arrhythmia
D. Exhaustion

224. Mental ability to make valid will is

A. Curren's rule is basis for this
B. Vicarious liability
C. McNaughton's rule
D. Testamentary capacity

225. Phadebas test is used to detect

A. Milk B. Colostrum
C. Saliva D. Urine

226. Explosive bullet have detonator cap on

A. Proximal aspect
B. Distal aspect
C. Centre
D. Both proximal and distal

227. Which of the following is used for narcoanalysis

A. Atropine B. Phenobarbitone
C. Pethidine D. Scopolamine

228. The term MERMER is related to

A. Brain fingerprinting
B. Narco analysis
C. DNA fingerprinting
D. Polygraph test

229. Simon's hemorrhages may be seen in case of

A. Hanging B. Strangulation
C. Suffocation D. Drowning

230. Killing of a child by its own parents is called as

A. Feticide B. Neonaticide
C. Filicide D. Infanticide

231. ABO antigen are found in all except

A. Saliva B. Sweat
C. CSF D. Gastric juice

232. What is the investigation of choice for blood grouping in old blood stain on cloth

A. Benzidine test
B. Acid dilution test
C. Haemin crystal test
D. Precipitin test

233. Which of the following tests is used to detect semen

A. Marsh test
B. Phenolphthalein test
C. Paraffin test
D. Barberio's test

234. Cornpicker's pupil is seen in

A. Cantharide B. Scorpion
C. Datura D. Snake bite

235. According to the transplantation of Human organs act 1994, what is the punishable for a doctor found guilty?

A. Less than 1 year
B. Less than 2 year
C. 2 to 5 years
D. More than 5 years

218. a	219. c	220. d	221. a	222. b	223. a	224. d	225. c	226. b	227. d
228. a	229. a	230. c	231. c	232. b	233. d	234. c	235. d		

236. Gastric lavage is contraindicated in the following

A. Barbiturate poisoning
B. Kerosene poisoning
C. Paracetamol poisoning
D. None of the above

237. Reversal of hot/cold temperature perception is seen in

A. Ciguatera fish poisoning
B. Gymnothorax poisoning
C. Scombroid food poisoning
D. Sweet clover disease

238. There has been an outbreak of a new strain of virus in your state and Government has made it compulsory that every single person be vaccinated at the earliest so as to check the spread of the disease; but a colleague of yours who is also supposed to be vaccinated, refuses to give consent and says that he will sue you if you vaccinate him without his consent. What is the best option in this scenario?

A. Don't vaccinate him as you will be penalized
B. Vaccinate him
C. Obtain a court order and vaccinate him
D. None of the above

239. Cause of death in crush syndrome is

A. Necrosis of muscles
B. Fat embolism
C. Septicaemia
D. Acute renal failure

240. Which of the following is known as Love drug?

A. Methylenedioxymethamphetamine
B. Methylenedioxyamphetamine
C. Methylenedioxyethamphetamine
D. Gama Hydroxy Butyric Acid

241. Almond odour is seen in which poisoning

A. Chloral hydrate
B. Cocaine
C. Cannabis
D. Cyanide

242. In acute arsenic poisoning, greatest amount is found in

A. Liver
B. Muscle
C. Brain
D. Keratin tissue

243. Blast wind causes

A. Primary blast injury
B. Secondary blast injury
C. Tertiary blast injury
D. Quaternary blast injury

244. For embalming, chemicals are usually injected into

A. Carotid artery
B. Jugular vein
C. Femoral artery
D. Femoral vein

245. Poisoning with all the following causes constriction of the pupils except

A. Dhatura
B. Morphine
C. OP compounds
D. Pontine haemorrhage

246. Most common site of damage to stomach by corrosives in food filled stomach is

A. Lesser curvature
B. Lesser curvature and pylorus
C. Greater curvature
D. Body

247. A child of 11 years is brought by her neighbour with an alleged history of sexual assault by her father. Mother is not available to take consent. You should take consent from

A. The hospital superintendent
B. The police officer
C. The member of child welfare committee
D. The mother after her arrival

248. At the following blood carbon monoxide concentration the clinic picture will simulate alcoholic intoxication

A. 10-20%
B. 30-40%
C. 40-50%
D. 50-60%

236. b	237. a	238. c	239. d	240. b	241. d	242. a	243. c	244. a	245. a
246. b	247. c	248. c							

249. One of the following substance produce injuries which simulate contusion

A. Abrus precatorius
B. Capsicum annum
C. Semicarpus anacardium
D. Ricinus communis

250. In unexposed persons, the level of coproporphyrin in urine is

A. Less than 150 microgram / litre
B. Less than 100 microgram / litre
C. More than 500 microgram / litre
D. None of the above

251. Ganja is obtained from

A. Fresh leaves B. Dried leaves
C. Roots D. Flowering tops

252. Which of the following facts regarding the stature of the body is correct?

A. Immediately after death, the body may shorten by about 2-3 cm
B. Immediately after death, the body may lengthen by about 2-3 cm
C. Change in stature after death occurs only when the deceased was engaged in struggle at the time of death
D. There is absolutely no change in stature after death

253. Aconite poisoning causes all except

A. Tingling and numbness
B. Hyper salivation
C. Hypothermia
D. Increased BP

254. Common salt is used as preservative in case of poisoning by

A. Mineral acids
B. Alkalis
C. Aconite
D. Phenol

255. The characteristic features of poisonous snakes are all except

A. Nocturnal habit
B. Belly scales are incomplete
C. Long fangs
D. Compressed tail

256. Speed ball refers to

A. Heroin + Cocaine
B. Heroin + Strychnine
C. Cocaine + Baking soda
D. Alcohol + Chloral hydrate

257. Widmark's formula helps in the measurements of blood level of

A. Barbiturates B. Cocaine
C. Alcohol D. Benzodiazepines

258. Stain used for tattooing are all except

A. Indian ink
B. Vermillion
C. Osmium dye
D. Prussian blue

259. Which of the following statements about blood grouping is not correct?

A. It can be sued to resolve confusion of identity in alleged exchange of babies in maternity unit.
B. It is the method to conclusively fix the paternity.
C. It can assist in matching fragmented human remains in mass disasters.
D. It can help to show whether the blood stain on the weapon belongs to the suspect or victim.

260. Scorpion sting may present with following except?

A. Salivation and lacrimation
B. Arrhythmias
C. Hypothermia
D. Hypertension and Pulmonary edema

261. In starvation, the gall bladder may be

A. Distended B. Atrophied
C. Normal D. Show stones

262. Which of the following is the most reliable method of estimating blood alcohol level

A. Breath alcohol analyser
B. Cavett's test
C. Thin layer chromatography
D. Gas chromatography

263. Metal fume fever is common in chronic poisoning with

A. Lead B. Mercury
C. Thallium D. Zinc

249. c	250. a	251. d	252. b	253. d	254. d	255. b	256. a	257. c	258. c
259. b	260. c	261. a	262. d	263. d					

264. Callus is not formed in case of fracture of

A. Skull B. Mandible
C. Clavicle D. Phalanx

265. In chronic alcoholism which of the following is seen

A. Delirium tremens
B. Wernike's syndrome
C. Korsakoff's psychosis
D. All of the above

266. Arsenophagists are

A. Person using arsenic as abortion risk
B. Criminal using arsenic for homicidal purpose
C. Persons using it as cattle poison
D. Person who can tolerate high doses of arsenic after taking arsenic in low doses at frequent intervals

267. Specific antidote for nicotine is

A. Mecamylamine
B. Atropine
C. Dicobalamine
D. None

268. One of the following is Non-Poisonous

A. Elapidae B. Viperidae
C. Crotalidae D. Colubridae

269. Mercurialism is caused by

A. Inhalation of vapours of mercury
B. I.V. Injection
C. I.M. Injection
D. Oral ingestion

270. All are seen in Cadmium poisoning EXCEPT

A. Proteinuria
B. Painful bone lesions
C. Golden yellow staining of teeth
D. Cardiomyopathy

271. All of the following are phenanthrene group EXCEPT

A. Morphine B. Narcotine
C. Thebaine D. Codeine

272. One of the following statement with regard to Ethylene glycol is WRONG

A. Used as an anti freeze agent
B. There is no antidote
C. It give rise to tetany
D. It is a nephrotoxic poison

273. Exposure and abandonment of child under twelve years by his parents may lead to their prosecution under section

A. 315 IPC B. 316 IPC
C. 317 IPC D. 318 IPC

274. Mild poisoning by organophosphate occurs when the ChE activity is

A. 50-75% of normal
B. 20-50% of normal
C. 10-20% of normal
D. <10% of normal

275. Following are the causes of death in patient with burns except

A. Shock B. Suffocation
C. Sepsis D. Air embolism

276. One of the following statement is INCORRECT with regard to Carbon Monoxide poisoning

A. It blocks Cytochrome - A3 Oxidase & P-450
B. Death is due to chemical anoxia
C. Blood gets clotted after death
D. It causes necrosis & cavitation of basal ganglia

277. One of the following is not present in Sewer gas

A. CO B. CO_2
C. H_2S D. Methane

278. The ideal chelating agent in case of Glucose-6PD deficiencies is

A. DMSA B. DMPS
C. EDTA D. BAL

279. Toxalbumin is present in the oil extracted from

A. Castor B. Croton
C. Abrus D. Jetropa

280. 4th infralabial is largest in

A. Common cobra
B. Common krait
C. Russell's viper
D. Saw scaled viper

264. a	265. d	266. d	267. a	268. d	269. b	270. d	271.b	272. b	273. c
274. b	275. d	276. c	277. a	278. a	279. b	280. b			

281. Mental retardation is defined when I.Q. is less than

A. 90 B. 80
C. 70 D. 65

282. Match the following

1. Seiji Ogawa a. PCR
2. Kary Mullis b. DNA Fingerprinting
3. Lawrence Farwell c. Brain mapping
4. Alec Jeffreys d. Brain Fingerprinting

A. 1-c; 2-a; 3-d; 4-b
B. 1-d; 2-a; 3-c; 4-b
C. 1-c; 2-b; 3-d; 4-a
D. 1-b; 2-d; 3-a; 4-c

283. Which of the following is the earliest secondary sexual character to develop in males?

A. Increase in the size of penis
B. Increase in the size of testis
C. Appearance of pubic hairs
D. Both A and B

284. According to PCPNDT ACT, what is the maximum punishment for a doctor Found guilty?

A. Less than 1 year
B. Less than 2 year
C. 3-5 years
D. >5 years

285. In hanging, the Ligature Mark is above the level of Thyroid Cartilage in

A. 80% of cases
B. 75% of cases
C. 70% of cases
D. 65% of cases

286. Ectopic bruise is common in the region of

A. Foot B. Eye
C. Chest D. Hand

287. Excessive sexual interest in females is termed as

A. Satyriasis
B. Nymphomania
C. Hybristophilia
D. Formicophilia

288. The best method to avoid aspiration of fluids during gastric lavage in a comatose patient is by:

A. Putting the head of the patient at a lower level than his feet
B. Putting the patient in the left lateral position
C. Introduction of a cuffed endotracheal tube before lavage
D. Continuous suction of the fluid from the trachea

289. The only test to detect both choline and spermine in seminal stain is

A. Florence test
B. Barberio's test
C. Acid phosphatase test
D. Thin layer chromatography

290. In case of embalming, best method of injection is

A. Continuous injection and drainage
B. Continuous injection with disrupted drainage
C. Alternate injection and drainage
D. Discontinuous injection and drainage

291. Medical termination of pregnancy can be done as per MTP Act, maximum up to a gestational age of

A. 12 weeks B. 16 weeks
C. 20 weeks D. 24 weeks

292. Average blood alcohol required for alcohol gaze nystagmus is

A. 30 mg% B. 50 mg%
C. 80 mg% D. 150 mg%

293. The preferred solution for stomach wash in cyanide poisoning is

A. Potassium permanganate
B. Sodium thiosulphate
C. Calcium gluconate
D. Aluminium hydroxide

294. Cause of death in 'Japanese Detergent Suicide Technique' is by inhalation of

A. CO B. CO_2
C. Methane D. H_2S

281. c	282. a	283. b	284. c	285. a	286. b	287. b	288. c	289. d	290. d
291. c	292. c	293. b	294. d						

295. Paradoxical undressing is seen in case of

A. Hyperpyrexia
B. Hypothermia
C. Sexual perversion
D. None

296. Minimum age of a person who can be punished under Indian railway act is

A. 5 years B. 7 years
C. 12 years D. No such limit

297. Live birth according to Indian law is when:

A. Any part of living child comes out
B. Child is completely out of mothers private parts
C. Child is completely born and cries
D. Child is completely born and shows signs of respiration

298. Best defense for Adultery is

A. Accused is unmarried
B. Accused in Impotent
C. Woman only seduced
D. Age of accused is less than 12 years

299. In a female, consumption of same amount of alcohol, the blood alcohol level in comparison to male of same body weight will be

A. 10% less
B. 10% more
C. 25% more
D. Equal

300. After birth, the ductus venous closes by

A. 2 days B. 3 days
C. 4 days D. 10 days

295. b	296. d	297. a	298. b	299. c	300. c

Explanations

1. D. American law Institute test

McNaughton's rule: To establish a defence on the ground of insanity, it must be clearly shown that, at the time of committing the act, the accused was labouring under such defect of reason, from disease of mind, as not to know the nature and quality of the act he was doing, or if he did know it, that he did not know that what he was doing was wrong.

Durham's rule: An accused is not criminally responsible if his unlawful act is the product of mental Disease or mental Defect.

Currens rule: An accused is not criminally responsible, if at the time of committing the act, the defendant, as a result of mental disease or defect, lacks substantial Capacity to Conform his Conduct to the requirements of law.

American law institute (ALI) test: A person is not criminally responsible, if at the time of committing the act, as a result of mental disease or defect lacked substantial capacity either to appreciate the wrongfulness of his conduct or to conform his conduct to the requirements of the law.

Irrestible impulse test (new Hampshire doctrine): An accused is not criminally responsible, even if knows the nature and quality of his act and knows that it is wrong, if he is incapable of restraining himself from committing the act, because the free agency of his will has been destroyed by mental disease.

2. A. Inquest report

- Inquest means enquiry into the causes of death which is apparently not due to natural causes.
- Corpus delecti means "Body of offence" or "essence of crime"; means, the facts (elements) of any criminal offence e.g. murder.
- Verdict is a decision on an issue of fact in a civil or criminal case or an inquest.
- Open verdict means an announcement of the commission of crime without information regarding the accused.

3. C. Inquest report

As per Director General of Health Services (DGHS), Ministry of health and F.W., Govt. of India,

- Medical Records of indoor patients is stored in digitised form – indefinitely.
- Medical Records in hard copy should be stored as follows:
  a. OPD Records – 3 years
  b. In-patient's Medical Records – 3 years
  c. Medico-legal Registers and Case Sheets – 10 years or till the disposal of ongoing cases in any of the courts related to these records

As per Indian Medical Council (Professional conduct, etiquette and ethics/regulations, 2002)

- Indoor patients records should be kept for – 3 years.
- A doctor should provide the medical records within 72 hours when the patient or his/her authorised representative makes a request for it.

4. C. Advertisement

- Professional Misconduct is any conduct of the doctor, which is considered as disgraceful or dishonourable judged by medical practitioners of good repute and competence.
- Dichotomy or fee-splitting, i.e. receiving or giving commission to professional colleague or a manufacturer or trader in drugs or appliances, or to a chemist, dentist etc.
- Covering, i.e. having relations with unqualified persons, which enable them to practice midwife, or issuing certificates which enable such practices to occur etc.

- Adultery: abuse of professional position by committing adultery or improper conduct with a patient or by maintaining an improper association with a patient.
- Advertisement: Can be given on occasions such as, when starting a new clinic, when shifting the clinic etc., but repeated advertisement in a newspaper by a medical practitioner is an example of ethical negligence

5. A. Sir William J Herschel

- Fingerprints are discovered by Sir William J Herschel in 1877.
- It is systematized by Sir Francis Galton in1892.
- It is further improved by Sir Edward Henry.
- The First finger print bureau was established at Writer's Building, at Kolkata, India.

6. B. 0.4 mm/day

- Growth of Scalp hair: 3mm/day
- Growth of Beard: 0.4mm/day, and
- Growth of Nail: 0.1mm/day

7. D. Specialist with Neurosciences

- Brain-stem death should be certified by a Board of medical experts consisting of the following namely:
  - (i) The registered medical practitioner (RMP) in charge of the hospital in which brain-stem death has occurred;
  - (ii) An independent RMP, being a specialist, to be nominated by RMP specified in cause (i)
  - (iii) A neurologist or a neurosurgeon to be nominated by the RMP specified in clause (i)
  - (iv) The RMP treating the person whose brain-stem death has occurred.
- The burden of proof to diagnose brainstem death rests on the specialist with Neurosciences.

8. D. Document

- Sub = Under, Poena = Penalty.
- Subpoena means summons.
- It is a written document issued by the court and served to the witness. under a penalty in all cases to attend the court of law for giving evidence on a particular day and time.
- It is not a designation or decomposed body tissue.
- Courts are established to maintain law and order in the respective jurisdiction. On the contrary, tribunals are a part of judicial set up that deals with direct taxes, labour, cooperatives, claims for accidents, etc.

9. D. Male form of external genitalia

There are two types of pseudo-hermaphroditism:

a) **Male pseudo-hermaphroditism**

- Nuclear sex is XY
- There is presence of testis in the abdomen or inguinal canal, but the external genitalia is of female form.
- Characterized by female external genitalia, primary amenorrhea, normal sized breasts, scanty or absent axillary or pubic hair, due to testicular feminization.
- 5-a reductase deficiency occurs.

b) **Female pseudo-hermaphroditism**

- Nuclear sex is XX
- External genitalia are male form due to adrenal hyperplasia.
- 21 hydroxylase deficiency is most common

10. D. Sub-divisional Magistrate

- Sec. 304B IPC - Dowry death - Where the death of a woman is caused by any burns or bodily injury or occurs otherwise than under normal circumstances within seven years of her marriage and it is shown that soon before her death she was subjected to cruelty or harassment by her husband or any relative of her husband for, or in connection with, any demand for dowry, such death shall be called "dowry death", and such husband or relative shall be deemed to have caused her death.
- And in case of dowry death, the magistrate has to hold an Inquest and not by the police.
- The Deputy Superintendent of police or Forensic expert are not authorised to hold an inquest.
- Coroner inquest is not held in India.

11. B. Cholera

- Hypostatic congestion resembling post-mortem hypostasis may be seen even before death in case of a person slowly dying with circulatory failure, e.g., cholera, typhus, TB, uraemia, morphine and barbiturate poisoning, CCF, deep coma and asphyxia deaths.

12. D. Even if he does not consent

- Protection of life and personal liberty- No person shall be deprived of his life or personal liberty except according to procedure established by law.
- To protect the other people getting infections from the contagious patient, the Article 21 of Constitution of India allows treatment of the contagious patient without consent

13. B. Manganese

- Some manganese miners on an Australian island have been reported to be affected with a peculiar neurological disease characterised by upper motor neuron, cerebellar signs, and oculomotor symptoms known as Angurugu syndrome.
- Cobalt is added in the beer to give more foam, and excessive drinking of beer may cause Cardiomyopathy, known as Beer Drinker's Syndrome.
- Nickel is known to give rise to lung cancer.

14. B. Consent

- Doctrine of loco parentis: In an emergency situation involving children, when parents are not available or legal guardians are not available, consent from the person-in-charge of that child can be taken.

15. D. Gycerol

- For enzyme studies, blood is preserved in liquid nitrogen in Thermos flask,
- Toluene is the best preservative for urine. The other preservatives for urine are hydrochloric acid, thymol and Sodium fluoride (NaF is used in case of poisoning by Alcohol, CO, Cocaine and Cyanide).
- For virological examination, a piece of appropriate tissue is collected under sterile conditions and the sample is freezed or preserved in 80% glycerol in buffered saline.

16. C. The authority who has conducted inquest in that particular case

- The doctor receives the dead body to perform post-mortem examination from the investigating officer.
- After post-mortem examination the doctor should hand over the dead body to the investigating officer only, that means the authority who has conducted inquest in that particular case.

17. D. All of the above

- Common / Ordinary Witness is a person who gives evidence about the facts observed by himself.
- Expert Witness is one who is qualified or experienced in a scientific or technical subject and is capable of giving opinion from the facts observed by himself or others e.g. doctor, fingerprint expert, handwriting expert, firearm expert etc.

18. A. Medical aspects of Law

- Forensic medicine deals with application of medical knowledge into the processes of Law, both Civil and Criminal.
- In short, it deals with Medical aspects of Law.
- Medical jurisprudence deals with application of knowledge of Law in the practice of Medicine.

In short, it deals with Legal aspects of Medicine.

- Medical ethics deals with the moral principles, which should guide members of the medical profession in their dealings with each other, their patients and the state.

That means it includes

  - Doctor – Doctor relationship
  - Doctor – Patient relationship
  - Doctor – State relationship

- Medical etiquette deals with the conventional laws of courtesy to be observed between members of the medical profession (Doctor – Doctor Relationship).

19. D. Medical Examiner's system

- In India, there are only two types of Inquest:

1. Police Inquest and
2. Magistrate's inquest

- Previously there was Coroner's Inquest which is abolished.
- Medical Examiner system is never held in India.

20. D. Any of the above

- The cause of death in case of death due to hanging may be due to:
  - Asphyxia
  - Venous congestion
- Combined asphyxia and venous congestion
  - Cerebral ischemia
  - Reflex vagal inhibition
  - Fracture or dislocation of cervical vertebrae.
- Out of all, the commonest cause of death is combined asphyxia and venous congestion.

21. A. Growth at the site following trauma

- A causal relationship between trauma and tumour is extremely difficult to establish. However, one may come across such cases and occasional claims be litigated. The prerequisites to the assumption that any given case of tumour was caused by trauma rests in the fulfilment of Ewing's postulates (James
- Ewing, a US pathologist, 1866–1943):
  - Evidence of previous integrity of the injured part,
  - The injury must have been of sufficient severity to produce tissue disruption,
  - The tumour must have originated in the part of the body that sustained the injury,
  - It must be of the histologic type that could originate from the cells that have been disrupted by the trauma and
  - There must be proof of reasonable time interval between injury and appearance of the tumour.

22. C. Murder

- In India, Magistrate's inquest is done in cases of –
  - Death in police custody,
  - Death due to police firing,
  - Death while under police interrogation,
  - Death in prison,
  - Death of a mentally ill person in a psychiatric hospital,
  - Dowry death,
  - Exhumation etc.
  - In case of murder, the inquest is done by Police.

23. D. Juvenile court

- A juvenile offender is an offender who is less than 18 years of age (Both males and females).
- In case of juvenile offender the trial will not take place in a regular court, but in juvenile justice board.

24. A. 416 Cr.P.C

- Sec. 416 CrPC - If a woman sentenced to death is found to be pregnant, the High Court shall order the execution of the sentence to be postponed, and may, if it thinks fit, commute the sentence to imprisonment for life.
- Amendment: In section 416 of the principal Act, the words "order the execution of the sentence to be postponed, and may, if it thinks fit" shall be omitted.
- That read as – "If a woman sentenced to death is found to be pregnant, the High Court shall commute the sentence to imprisonment for life".

25. D. Both common and expert witness

- Common witness is also known as ordinary witness.
- A doctor is both common as well as expert witness. For example, when a doctor is mentioning about the dimensions and situation of a wound, he acts as common witness and when he mentions about the type of the wound, causative object etc., he acts as expert witness.

- The Indian Medical Council Act 1956 in section 15 (2) (C) states that, no person other than a medical practitioner enrolled on a state medical register shall be entitled to give evidence at any inquest or in any court of law as an expert under sec. 45 I.E.A. on any matter relating to medicine.

26. A. Cognizable Offence

- Cognizable offence is an offense in which a police officer can arrest a person without warrant from the Magistrate. Examples – Rape, murder, dowry death, ragging etc.
- Non-cognizable offence is an offense in which a police officer cannot arrest a person without warrant from the Magistrate.
- Summons cases are offences for which imprisonment is less than 2 years.
- Warrant cases are offences for which imprisonment is more than 2 years.

27. D. 7 years

- Sec. 197 IPC - Issuing or signing false certificate.—Whoever issues or signs any certificate required by law to be given or signed, or relating to any fact of which such certificate is by law admissible in evidence, knowing or believing that such certificate is false in any material point, shall be punished in the same manner as if he gave false evidence.
- Sec. 193 IPC - Punishment for false evidence.—Whoever intentionally gives false evidence in any stage of a judicial proceeding, or fabricates false evidence for the purpose of being used in any stage of a judicial proceeding, shall be punished with imprisonment of either description for a term which may extend to seven years, and shall also be liable to fine, and whoever intentionally gives or fabricates false evidence in any other case, shall be punished with imprisonment of either description for a term which may extend to three years, and shall also be liable to fine.

28. D. Permanent erasure of the name of the RMP from the Medical Register

- The disciplinary action taken by medical council against doctor may be warning or penal erasure (removal of the name of the medical practitioner from the medical register).
- Penal erasure may be temporary or permanent.
- In case of serious and gross medical negligence, the name of the medical practitioner is removed permanently, known as professional death sentence.
- Rigorous imprisonment and Death penalty can be passed only by the court of law.

29. A. Second schedule of Indian Medical Council Act 1956

Recognition of Medical Qualifications by MCI is as follows:

- The First Schedule: Contains the recognized medical qualifications granted by Universities in India.
- The Second schedule: Contains the recognized medical qualifications granted outside India.
- Third schedule has two parts; – Part I: Contains medical qualifications granted by Indian Universities which are not included in First schedule – Part II: Contains medical qualifications granted by Foreign Universities which are not included in Second schedule

30. C. Infamous conduct

- A doctor can advertise only on certain occasions such as, when he starts practice, when he shifts his clinic, when he gains additional qualification to practice etc. But repeated advertisement in a newspaper by a medical practitioner amounts to Infamous conduct.
- Professional negligence is the absence of reasonable care and skill or negligence of a doctor in the treatment of a patient, which may result in injury or death.
  - In civil negligence a patient brings charges of negligence against

doctor for monetary compensation (damages) for the damage (harm) suffered by him.

- Criminal negligence occurs when the doctor shows gross lack of competency, gross inattention, and criminal interference to the patient's safety, or gross negligence in the selection and application of remedies.
- Privileged communication is defined as "a bonafide statement made by doctor upon any subject matter to the appropriate authority to protect the interests of the community or of the State".

31. C. Higher court

- Whenever a court of law pass a sentence, the offender has got the rights to appeal against the verdict of lower court to higher court.
- The higher court has got the power whether to retain the same sentence or to enhance or to commute the sentence passed by the lower court.

32. B. 18 years

As per Section 375 IPC, A man is said to commit "rape" if he

a. penetrates his penis, to any extent, into the vagina, mouth, urethra or anus of a woman or makes her to do so with him or any other person; or

b. inserts, to any extent, any object or a part of the body, not being the penis, into the vagina, the urethra or anus of a woman or makes her to do so with him or any other person; or

c. manipulates any part of the body of a woman so as to cause penetration into the vagina,urethra, anus or any part of body of such woman or makes her to do so with him or any other person; or

d. applies his mouth to the vagina, anus, urethra of a woman/makes her to do so with him or any other person, under the circumstances falling under any of the following 7 descriptions:

- 1. Against her will.
- 2. Without her consent.
- 3. With her consent, when her consent has been obtained by putting her or any person in whom she is interested in fear of death or hurt.
- 4. With her consent, when woman believes he is another man to whom she is lawfully married.
- 5. With her consent, when she is unable to understand the nature and consequences of that to which she gives consent.
- 6. With or without her consent when she is under 18 years of age; or
- 7. When she is unable to communicate consent.
- Exception 1 – A medical procedure or intervention shall not constitute rape
- Exception 2 – Sexual intercourse or sexual acts by a man with his own wife, the wife not being under 15 years of age, is not rape
- NOTE: The Supreme Court on October 11, 2017 criminalised sexual intercourse between a man and his underaged wife, provided a complaint is filed within a year.

33. D. Any of the above

- Dying declaration is a written or oral statement of a person, who is dying due to some unlawful act, relating to the circumstances leading to his impending death.
- A magistrate should be called to record statement.
- If the condition of the patient is serious, the doctor or any other person can record the statement in the presence of two witnesses.

34. C. Therapeutic abortion

- Declaration of Tokyo is related to Torture and other cruel and degrading treatment or punishment.
- Declaration of Helsinki is related to Human experimentation.
- Declaration of Oslo is related to Therapeutic abortion.
- The Declaration of Malta is related to Role of Doctors in Hunger strike.

35. B. 2 year

- Sec. 304A IPC - Causing death by negligence.—Whoever causes the death of any person by doing any rash or negligent act not amounting to culpable homicide, shall be punished with imprisonment of either description for a term which may extend to two years, or with fine, or with both.

36. C. Little finger

- Fingerprint reader (FINDER), is a computerized automatic fingerprint reading system which can record each fingerprint data in half a second.
- Prints of 8 fingers are recorded except little finger.

37. C. State Medical Council

- The doctors are governed by the Medical council of India and state medical council.
- If the doctor is guilty of professional misconduct usually the state medical council takes disciplinary action in the form of warning or penal erasure.
- The Medical council of India can also take disciplinary action, for example, if the MCI notices that a doctor is given false declaration that he is working as a full time teacher in a medical college, MCI takes action against him.
- Director of Medical and Health Service, Health secretary of State Government and Indian Medical Association cannot take action against professional misconduct.

38. C. Urea

Post-mortem chemistry:

- In Blood - Decrease in Glucose, Na and Cl.
- In C.S.F. - Decrease in Glucose.

No change in Urea, Creatinine, Na, Ca and Mg.

- In V. Humour - Decrease in Glucose, Na, and Pyruvic acid.
- All other parameters increase after death.

39. D. All of the above

- Sec. 337 IPC - Causing hurt by act endangering life or personal safety of others.—Whoever causes hurt to any person by doing any act so rashly or negligently as to endanger human life, or the personal safety of others, shall be punished with imprisonment of either description for a term which may extend to six months, or with fine which may extend to five hundred rupees, or with both.
- Sec. 338 IPC - Causing grievous hurt by act endangering life or personal safety of others.—Whoever causes grievous hurt to any person by doing any act so rashly or negligently as to endanger human life, or the personal safety of others, shall be punished with imprisonment of either description for a term which may extend to two years, or with fine which may extend to one thousand rupees, or with both.
- Sec. 304A IPC - Causing death by negligence.—Whoever causes the death of any person by doing any rash or negligent act not amounting to culpable homicide, shall be punished with imprisonment of either description for a term which may extend to two years, or with fine, or with both.

40. B. Civil wrong

- A tort is a civil wrong that results when a defendant engages in conduct that harms another person.
- In tort claims the suing party asks for monetary damages from the defendant to compensate the harm he or she has suffered.
- Medical malpractice cases in which patient demands compensation are tort cases.

41. A. Cyanosis

- Cyanide poisoning manifests with convulsions, dilated pupils, initially bradycardia and hypertension followed by tachycardia and hypotension, tachypnea followed by bradypnea, pulmonary edema and brick red colour of skin and mucus membrane.
- Cyanosis is a late feature.

42. A. Ergot alkaloids

- Ergotism is an intensely painful burning sensation in the limbs and extremities caused by ergotamines from a fungus (Claviceps purpurea) that can contaminate rye and wheat.
- Ergotism is the effect of long-term ergot poisoning, traditionally due to the ingestion of the alkaloids produced by the Claviceps purpurea fungus that infects rye and other cereals, and more recently by the action of a number of ergoline-based drugs. It is also known as ergotoxicosis, ergot poisoning and Saint Anthony's fire.
- The symptoms can be roughly divided into convulsive symptoms and gangrenous symptoms.
- Convulsive symptoms of ergotism: Convulsive symptoms include painful seizures and spasms, diarrhea, paresthesias, itching, mental effects including mania or psychosis, headaches, nausea and vomiting. Usually the gastrointestinal effects precede central nervous system effects.
- Gangrenous: The dry gangrene is a result of vasoconstriction induced by the ergotamine-ergocristine alkaloids of the fungus. It affects the more poorly vascularized distal structures, such as the fingers and toes. Symptoms include desquamation or peeling, weak peripheral pulses, loss of peripheral sensation, edema and ultimately the death and loss of affected tissues. Vasoconstriction is treated with vasodilators.

43. A. Consent

Principles of medical ethics are:

1. Respect for autonomy: Respect the decisions made by other people concerning their own lives.
2. Beneficence: Action done for the benefit of others.
3. Non-maleficence: "Do no harm."
4. Justice: Treat all people equally, fairly, and impartially.

44. D. Recognition of Medical Qualifications

- Functions of State medical council are:

1. Medical Register: It maintains Medical Register, in which names of all doctors who are enrolled in the state medical council are entered.
2. Warning notice: SMC can issue Warning Notice containing certain practices which are regarded as falling within the meaning of the term "Professional Misconduct".
3. Disciplinary action against doctors who is guilty of professional misconduct.

- Medical qualifications are recognized by the Medical council of India.

45. B. Declaration of Geneva

- Declaration of Sydney is related to the definition of Death (Brain death).
- Declaration of Geneva comprises the modernized versions of the Hippocratic Oath.
- Declaration of Venice is related to terminal illness.
- Declaration of Istambul is related to Organ Trafficking and Transplant Tourism.

46. B. 32°C

- Exposure to cold produces hypothermia which is defined as an oral or axillary temperature less than 35°C.
- The ability of the hypothalamus to regulate temperature is completely lost below 30°C.
- III effects are manifested in 3 stages.
  - In the first stage, the patient feels old and shivers and the body temperature falls.
  - In the second stage, shivering stops when the temperature is at or below 32°C.
  - In the third stage, the temperature is lowered to 27°C or even less, which if maintained for 24 hours or longer is fatal.

47. B. Person incapable of making their will

- Active Euthanasia: Inflicting painless death by an act of commission e.g. injecting large doses of barbiturates/ KCl/curare etc.
- Passive Euthanasia: Inflicting painless death by an act of omission e.g. withdrawal of life saving measures/ life support.
- Voluntary Euthanasia: With the consent of the dying person.
- Involuntary (Compulsory) Euthanasia: Without/against the consent of the person.
- Non voluntary Euthanasia: The person is incapable of making their wishes known, e.g. irreversibly comatose patient, severely defective patients.

48. D. Section 92

- Sec. 87 IPC - Act not intended and not known to be likely to cause death or grievous hurt, done by consent.— Nothing which is not intended to cause death, or grievous hurt, and which is not known by the doer to be likely to cause death or grievous hurt, is an offence by reason of any harm which it may cause, or be intended by the doer to cause, to any person, above eighteen years of age, who has given consent, whether express or implied, to suffer that harm; or by reason of any harm which it may be known by the doer to be likely to cause to any such person who has consented to take the risk of that harm.
- Sec. 89 IPC - Act done in good faith for benefit of child or insane person, by or by consent of guardian.— Nothing which is done in good faith for the benefit of a person under twelve years of age, or of unsound mind, by or by consent, either express or implied, of the guardian or other person having lawful charge of that person, is an offence by reason of any harm which it may cause, or be intended by the doer to cause or be known by the doer to be likely to cause to that person
- Sec. 90 IPC - Consent known to be given under fear or misconception. A consent is not such a consent as it intended by any section of this Code, if the consent is given by a person under fear of injury, or under a misconception of fact, and if the person doing the act knows, or has reason to believe, that the consent was given in consequence of such fear or misconception; or Consent of insane person. If the consent is given by a person who, from unsoundness of mind, or intoxication, is unable to understand the nature and consequence of that to which he gives his consent; or Consent of child.— unless the contrary appears from the context, if the consent is given by a person who is under twelve years of age.
- Sec. 92 IPC - Nothing is an offence by reason of any harm which it may cause to a person for whose benefit it is done in good faith, even without that person's consent, if the circumstances are such that it is impossible for that person to signify consent, or if that person is incapable of giving consent, and has no guardian or other person in lawful charge of him from whom it is possible to obtain consent in time for the thing to be done with benefit.

49. D. 2 Years

- As per Consumer protection Act 1986, a complaint is to be filed within 2 years from the date on which a cause of action has arisen.
- An order is to be given within 90 days, unless the goods in question are to be sent to an approved testing laboratory.
- Appeal to the higher forum/ commission to be made within 30 days.

50. B. Conium masculatum

- Conium masculatum in also known as Hemlock, contains mainly coniline which is a peripheral nerve poison.
- It causes burning in mouth and throat, vomiting, diarrhoea, slow respiration,

increased and later slow pulse, mental confusion, tremors, ataxia, sometimes blindness, progressive motor paralysis extending upwards from the extremities, coma and death from respiratory paralysis.

51. C. Can cause immediate death

- Hyperventilation before drowning can cause rapid death, as CO2 will be flushed out and there will be no hypercapnia, which is necessary to stimulate respiratory centre.

52. D. Children starved by their parents

- Starvation may be homicidal. Children starved by their parents/guardians is known as "Baby-farmer".
- Starvation may be accidental as in person is caught/entombment occurs during earthquakes or landslides. Accidental starvation may be seen in famine and flood.
- Suicidal starvation occurs when someone deliberately withhold food as seen among prisoner who go on hunger strike as a form of protest.

53. B. Sex

- Chilotic line is an anthropometric line extending from the posterior aspect of the ilio-pectineal eminence to the closest point on the anterior auricular margin (the pelvic segment) and then to the iliac crest (the sacral portion).
- The pelvic segment is predominant in females and the sacral segment is predominant in males.
- Thus, chilotic index may be used in forensic practice to identify the sex of human skeletal remains, although studies suggest its reliability is limited.

54. B. Organophosphorus

- In 1930, thousands of Americans were poisoned by an illicit extract of Jamaica ginger ("jake") used to circumvent the Prohibition laws.
- A neurotoxic organophosphate compound, triorthocresyl phosphate (TOCP), had been used as an adulterant.
- The earliest reports were of peripheral neuritis, but later it was evident that an upper motor neuron syndrome had supervened.
- This TOCP poisoning apparently involved various cell groups and tracts in the spinal cord; the lesions was not peripheral at all.
- The principal findings showed the spasticity and abnormal reflexes of an upper motor neuron syndrome.

55. A. Trotter and Glesser's Formula

- Stature from long bones can be estimated by measuring the length of long bones and by using regression formulae, such as:
  - Jit and Sing formula,
  - Trotter and Glesser's formula,
  - Karl-Pearson's formula,
  - McKern & Steele's formula,
  - Dupertuis and Hadden's formula etc.
- Haase's rule is used to estimate the gestational age of a foetus.
- Gustaffson's method is used to estimate the age of a person by secondary changes in the teeth.
- Rule of 12 is for rigor mortis.

56. A. Dentition

- The age of a child up to 12-14 years can better be determined by the study of eruption of temporary and permanent teeth.
- The study of appearance and fusion of ossification centres help to estimate the age up to 21 years.
- Head circumference helps to estimate the age of a foetus.
- Anthropometry is used to identify an adult person by the descriptive data, body moles/scars and body measurements.

57. C. Mass Casualties

- Triage is the sorting out and classification of casualties of war or other disasters, to determine priority of need and proper place of treatment.

58. A. Gastric lavage should be done

- Signs and symptoms are of organophosphorus poisoning including smell of kerosene.
- Atropine is the vantidote for organophosphorus.
- Airway management is an important step in all the cases.
- Gastric lavage is useful anytime within 3 hours after ingestion of a poison. (But lavage can be done up to 12 hours after ingestion in poisoning by tricyclic antidepressants, salicylates, antihistamines, phenothiazines).

59. C. 40 years

- The four pieces of the body of sternum start fusing from below upwards.
- The 4th piece fuses with 3rd piece at the age of 15 years, the 3rd piece fuses with 2nd piece at the age of 20 years and the 2nd piece fuses with the 1st piece at the age of 25 years.
- The xiphisternum fuses with body at the age of 40 years.
- The manubrium fuses with body at an old age.

60. C. Whorls

The incidence of fingerprints are

- Loops - 67%,
- Arches - 6-7%,
- Whorls - 25%, and
- Composite - 1-2%.

61. A. Precipitin test

- Precipitin test is species specific test which is used to identify the species of any body fluid or tissue.
- Neutron activation analysis is used to identify the metals.
- Spectroscopic examination is a confirmatory test for blood.
- Benzidine test is a presumptive test for blood.

62. D. Grandfather

- Atavis=grandfather.
- Normally a child resembles its parents, but in case of atavism, a child doesn't resemble its parents, but resembles its grandparents.

It is due to inheritance of characteristics from remote rather than from immediate ancestors, due to a chance recombination of genes.

63. D. Hospitals where some patients are charged and some are not charged

- Exemption given to doctors from COPRA is
  1. Doctors who are working in government hospitals, where patients are not charged at all.
  2. Doctors working in hospitals where services are rendered free or charge to everybody.
  3. Doctors working in hospitals where only a nominal registration fee is collected, and all other services are provided free of cost.
- Doctors Not Exempted from COPRA is
  1. Doctors who are working in hospitals where some patients are charged and some are not charged.
  2. Doctors working in private hospitals where the patients are charged.

64. A. Bernard Spilsbury

- Bernard Spilsbury (1877-1947) is the father of Modern Forensic Medicine.
- Mathieu Orfila (1787-1853) is the father of Modern Toxicology.
- Paracelsus (1493-1541) is the father of Toxicology and
- Paolo Zacchia (1584-1659) is the father of Forensic Medicine.

65. B. Quinacrine dihydrochloride

- Staining for X chromosomes are:
  1. Fluorescent Feulgen reaction using acriflavin Schiff reagent; (Chromatin positivity: 50-70% in females and 0-2% in males) and
  2. FISH (Fluorescent in situ hybridization).
- The 'Y' Chromosomes present in males are fluorescent for the dye Quinacrine dihydrochloride.

66. B. 3 month old infant with bruise on right forearm and left buttock; parent states infant rolled off changing table

- Baby may be able to kick himself over, from his tummy to his back, as early as age 4 months. It may take him until he's about 5 or 6 months to flip from back to front, though, because he needs stronger neck and arm muscles for that manoeuvre.
- The injuries mentioned under options A, B and C is accordance with the history given.

67. D. A, AB, B or O

- There are 4 phenotypes and 6 genotypes in blood group inheritance.
- If father is phenotype A (Genotype may be AA or AO) and mother is phenotype B (Genotype may be BB or BO), the offspring's genotype can be AB or AO or OO or OB, which will manifest the genotype as AB or A or O or B.

68. B. Tying of a plastic bag over the head

- Beating on the sole of the feet is known as Falanga or Falaka or Bestinado.
- Dry submarine means Head and face are covered with a plastic bag.
- In Wet submarine (Latina), Head is submerged in polluted water.
- Inserting heated metal skewer into the anus is known as Black slave.

69. B. Theory of exchange

- Jit & Sing, Trotter & Glesser, Karl-Pearson, McKern & Steele and Dupertuis & Hadden are known for formula for estimation of stature.
- Sir Edmond Locard is known for Theory of exchange, (i.e. whenever two objects come in contact with each other always there is transference of material from one object to the other) and also known for Poroscopy (i.e. Locard's method – Identification of a person by the study of the mouths of the ducts of sweat glands in the ridges of fingers).
- Sir Alphonso Bertillon is known for System of personal identification using the body measurement, body marks and body description.
- Sir William J Herschel, Sir Francis Galton and Sir Edward Henry are known or dactylography.

70. D. Trunk

- In case of bodies lying in water, the post-mortem staining is usually found on the face, the upper part of the chest, hands, lower arms, feet and legs, as the body usually floats face down, buttocks up with limbs hanging down in front of the body.

71. C. 30-48 hours

- In acute starvation, there is a feeling of hunger and the hunger pain (Hunger pangs) starts in about 12 to 24 hours, which lasts in about 30 to 48 hours but thirst becomes intense.
- After 4 to 5 days of starvation, general emaciation and absorption of the subcutaneous fat begins to occur.

72. B. Minimum imprisonment for forced heterosexual sodomy is 10 years

- Sec.377 IPC. Unnatural offences.—Whoever voluntarily has carnal intercourse against the order of nature with any man, woman or animal, shall be punished with 1[imprisonment for life], or with impris¬onment of either description for a term which may extend to ten years, and shall also be liable to fine.
- As per recent amendment in rape law, minimum imprisonment for rape is 10 years and forced anal intercourse (forced means without consent) amounts to rape.

73. C. Age

- Ossification centre for lower end of femur appears at 9th month of intra-uterine life and fuses with the shaft at 18-19 years in males and 17-18 years in females (one year earlier than males), which helps in determination of age of a person.
- Stature/Height of a person can be determined by the entire femur.
- However weight cannot be determined by the femur.

74. B. 2

- Flaccidity of Eyeball: Sunken eyes due to decreased intraocular tension.
- Value of intra-ocular tension is
  - During life : 14-25 gm.
  - Soon after death : <12 gm.
  - Within half an hour : < 3gm.
  - End of 2 hours : NIL

75. D. Upper end of tibia

- Ossification centre for upper end of humerus appears at ½ to 1 year.
- Ossification centre for scaphoid appears at 4-5 years.
- Ossification centre for lower end of femur appears at 9th month of intra-uterine life.
- The ossification centre for the upper end of tibia appears at birth.
- The other ossification centres appear at birth are, 4th piece of the body of the sternum and cuboid.

76. A. Parietal

- The glabella, supraorbital ridges, mastoid process, occipital protuberance are prominent in males and not prominent in females.
- But the frontal and parietal eminences are more prominent in females than that of males.

77. C. 30-35 years

- Ectocranial sutures of sagittal starts fusing at 30-40 years, coronal starts fusing at 40-50 years and lambdoid starts fusing at 50-60 years.
- The endocranial sutures fuse 5-10 years earlier than ectocranial sutures.
- So, sagittal starts fusing at 20-25 years, coronal starts fusing at 30-35 years and lambdoid at 40-45 years (in this question we have to consider fusion of endocranial sutures).

78. A. Baygon

Oximes are indicated only in Organophosphorus compounds poisoning and contraindicated in Carbamates.

The OP compounds are:

Alkyl phosphates	Aryl phosphates
HETP	Parathion (Follidol)
TEPP	Methyl Parathion (Metacide)
OMPA	Diazinon (Tik-20)
Malathion etc.	Paraoxon etc.

Carbamate insecticides include carbaryl, aldicarb, **baygon,** ficam and propoxur.

79. C. Use reasonable amount of force and examine

- Sec. 53 CrPC: Examination of accused by medical practitioner at the request of police officer.

1. When a person is arrested on a charge of committing an offence of such a nature and alleged to have been committed under such circumstances that there are reasonable grounds for believing that an examination of his person will afford evidence as to the commission of an offence, it shall be lawful for a registered medical practitioner, acting at the request of a police officer not below the rank of sub- inspector, and for any person acting in good faith in his aid and under his direction, to make such an examination of the person arrested as is reasonably necessary in order to ascertain the facts which may afford such evidence, and to use such force as is reasonably for that purpose.
2. Whenever the person of a female is to be examined under this section, the examination shall be made only by, or under the supervision of, a female registered medical practitioner.

80. A. Sex

- The sex determination from the skeletal remains can be done only after puberty, except in case of greater sciatic notch where sex can be determined even in a foetus.
- In case of hip bone, sex can be determined from the greater sciatic notch (narrow and deep in males and wide and shallow in females), shape of the body of the pubis (triangular in males and quadrangular in females), and pre-auricular sulcus, which is

not prominent (sometimes not even visible), narrow & shallow in males, and more frequent, broad and deep in females

- Best criteria in pelvis to determine sex is Sciatic notch index.
- Pre-Auricular Sulcus is a Tertiary sexual characteristic.

81. D. Greenish discoloration

- Maceration is a process of aseptic autolysis.
- The changes of maceration were well studied and classified by Langley.
- Amniotic membrane should be intact (exclusion of air) with abundant liquor amnii.
- The earliest sign is skin slippage which is seen in 12 hours after death of the fetus.
- The typical features are seen in 3-4 days.
- The skin is coppery brown in colour and has a sweetish disagreeable odour.
- Large blebs appear at 24 hours.
- The body is soft, flaccid and flattens out when placed on a level surface.
- There will be hypermobility of the joints.
- The skull bones are separated with collapsed vertebral column.

82. C. Jejunum

- In order of frequency, the structures most likely to be damaged in blunt abdominal trauma are: liver, spleen, kidney, intestine, abdominal wall, mesentery, pancreas and diaphragm.
- The jejunum is the commonest site of rupture, followed by the ileum, duodenum, caecum and large intestine.

83. A. Beneath the esophagus

- Apparent "bruising" of the neck musculature does not always indicate compression of or trauma to the neck.
- In any autopsy, substantial haemorrhage may be seen over the posterior surface of the oesophagus and the anterior longitudinal ligament of the cervical spine.
- vThis is a common post mortem artefact described fully by Prinsloo and Gordon, sometimes known by their name.
- This can be reduced to certain extent by bloodless field of dissection of the neck.

84. A. Pelvis

- According to Krogman, percentage of accuracy in determination of sex from bones is as follows:
  - Entire skeleton 100%
  - Pelvis + Skull 98%
  - Pelvis alone 95%
  - Skull alone 90%
  - Only long Bones 80%

85. C. 193

- Sec.191 IPC. Giving false evidence.—Whoever, being legally bound by an oath or by an express provision of law to state the truth, or being bound by law to make a declaration upon any subject, makes any statement which is false, and which he either knows or be-lieves to be false or does not believe to be true, is said to give false evidence. Explanation 1.—A statement is within the meaning of this sec¬tion, whether it is made verbally or otherwise. Explanation 2.—A false statement as to the belief of the person attesting is within the meaning of this section, and a person may be guilty of giving false evidence by stating that he believes a thing which he does not believe, as well as by stating that he knows a thing which he does not know.
- Sec.192 IPC. Fabricating false evidence.—Whoever causes any circumstance to exist or 1[makes any false entry in any book or record, or electronic record or makes any document or electronic record containing a false statement], intending that such circumstance, false entry or false statement may appear in evi¬dence in a judicial proceeding, or in a proceeding taken by law before a public servant as such, or before an arbitrator, and that such circumstance, false entry

or false statement, so ap¬pearing in evidence, may cause any person who in such proceeding is to form an opinion upon the evidence, to entertain an errone¬ous opinion touching any point material to the result of such proceeding, is said "to fabricate false evidence".

- Sec.193 IPC. Punishment for false evidence.—Whoever intentionally gives false evidence in any stage of a judicial proceeding, or fabri¬cates false evidence for the purpose of being used in any stage of a judicial proceeding, shall be punished with imprisonment of either description for a term which may extend to seven years, and shall also be liable to fine, and whoever intentionally gives or fabricates false evidence in any other case, shall be punished with imprisonment of either de¬scription for a term which may extend to three years, and shall also be liable to fine.
- Sec.197 IPC. Issuing or signing false certificate.—Whoever issues or signs any certificate required by law to be given or signed, or relating to any fact of which such certificate is by law admissi¬ble in evidence, knowing or believing that such certificate is false in any material point, shall be punished in the same manner as if he gave false evidence.

86. B. Leprosy

- Permanent impairment of fingerprints can occur in:
  - Leprosy, Charring, Radiation, Electrical injuries, and Corrosives.
- Ridge alteration take place in:
  - Eczema, acanthosis nigricans, scleroderma, dry and atrophic skin.
- Temporarily modification is seen in:
  - Coeliac disease.
- Change in the distance between ridges but without change in pattern is seen in:
  - Rickets and acromegaly.

87. B. Sex

- Corporo-basal index : Length of Body of S1/Length of Base of Sacrum x 100.
- In Males, it is 45 and in females it is 40.5
- It is the only index, which is more in Males.
- Other indices to differentiate sex from bones are:
  - Sternal index,
  - Ischio-pubic index (Washburn index),
  - Sciatic notch index,
  - Sacral Index and
  - Medullary Index.

88. A. Finger print pattern

- Identical twins have the same DNA fingerprint pattern, HLA system and Blood group.
- But the fingerprints pattern is different in identical twins, that's why it's the best method of identification.

89. C. Race

The following indices help to differentiate race from bones:

1. Cephalic Index: Maximum transverse breadth of skull / Maximum anteroposterior length of skull × 100
2. Brachial Index: Length of Radius/ Length of Humerus × 100
3. Crural Index: Length of Tibia/Length of Femur × 100
4. Humero-Femoral Index (Intra-membral index): Length of Humerus/ Length of Femur × 100
5. Inter-membral index : (Length of Humerus + Length of Radius)/(Length of Femur + Length of Tibia) x 100

90. B. Sternum

- Medullary Index is used to differentiate the sex.
- Medullary index = Diameter of Whole bone/Diameter of Medulla x 100.
- Ideal bones for Medullary index are: Tibia, Humerus, Radius, Ulna.
- Medullary index is also used to differentiate human hair from animal hair; i.e., Diameter of whole hair/ Diameter of Medulla x 100.

91. B. 100 ml

- Minimum amount of blood required for fatality in case of EDH is 100ml

- Death may occur in cases of SDH, if haemorrhage is about 100-150ml.
- Minimum blood to give rise to Acute Cardiac Tamponade: 200 ml
- Amount of air needed to produce fatal air embolism: 100ml

92. A. Public Prosecutor

- For a prosecution witness, the public prosecutor will start with chief examination, followed by cross examination by the defence lawyer.
- Again, re-examination is conducted by the public prosecutor. The object is to correct any mistake or to clarify or add details to the statements the witness has made in cross-examination.

93. D. Finger prints

Bertillon system or Anthropometry (Portrate Parle) is an Anthropometric system based on the physical measurement of specified parts of body, even if there are no biological Specimens.

Three important criteria of this system is

1) **Descriptive data:** Includes full description of a person such as complexion, colour of the hair, colour of the iris, shape of the nose, lips, chin, etc.
2) **Body marks**: Such as moles, birth marks, scars, etc.
3) **Body measurements:** 11 in number, namely,
   1. Standing height
   2. Sitting height
   3. Length of the head
   4. Breadth of the head
   5. Breadth of the face
   6. Distance between two outstretched upper limbs
   7. Length of left forearm and hand
   8. Length of left middle finger
   9. Length of left little finger
   10. Length of left foot and
   11. Length of **right** ear

94. C. Tiara

- Superimposition is a technique in identifying a person by superimposing the X-ray of skull found after death on the photo of the face of the suspected person.
- This was first applied by Glaister and Brash in 1935 in Isabella Ruxton's case.
- The 'TIARA' was used to enlarge the photo to life size.
- A negative result having more credibility because it can definitely be stated that the skull and the photograph are not those of the same person.

95. A. Ethylene glycol

- Ethylene glycol; also called antifreeze. It is a clear, colorless, odourless, non-volatile liquid with a bitter-sweet taste.
- MOA – Toxicity through metabolites, i.e. glycolic and oxalic acids which inhibit oxidative phosphorylation.

Clinical features:

- Tachycardia, tachypnoea and congestive heart failure
- Hypocalcemia, electrolyte imbalance and metabolic acidosis (due to glycolic acid)
- Oxaluria, acute tubular necrosis, renal failure and Calcium oxalate crystals (due to oxalic acid).

Treatment:

- Gastric lavage, sodium bicarbonate (to combat acidosis), calcium gluconate (to correct hypocalcemia)
- Ethanol or 4 methyl pyrazole (fomepazole) as antidote
- Hemodialysis in cases of severe poisoning.

96. C. Pointed object cannot cause it

- An abrasion is destruction of the skin, which involves only superficial layers of skin, i.e., only epidermis.
- It is a two dimensional injury - only length and breadth.
- It bleeds less and does not form scar after healing.
- A scratch can be produced by the tip of a knife or any pointed object.
- Direction can be made out by the heaped up epithelium at the end.

97. C. 4th degree burns

- Dupuytrens Classification of burns is as follows:
  - First degree — Erythema
  - Second degree — Vesication with blister formation
  - Third degree — Destruction of superficial layer of dermis
  - Fourth degree — Destruction of whole skin (dermis)
  - Fifth degree — Destruction of fascia and muscles
  - Sixth degree — Charring involving vessels, nerve, Bones

98. B. 450

- The number of Ossification Centers
  - at 8th week of intra-uterine life are 806 and
  - at birth are 450.
  - An adult will have 206 bones.

99. D. Implied term of contract between doctor and patient

- Professional secrecy is an implied term of contract between the doctor and his patient.
- The doctor is obliged to keep secret, all that he comes to know concerning the patient in the course of his professional work.
- Its disclosure would be a failure of trust and confidence.
- The patient can sue the doctor for damages if the disclosure is voluntary, has resulted in harm to the patient and is not in the interest of the public.

100. C. 68 cm

The height of a child:

- at full term is about 50 cm.
- at 6 months is about 60cm.
- at 1 year is about 68cm. and
- at 4 years is between 90 and 100cm (Twice the birth height).

101. D. 351

- 351 of IPC: Assault.—Whoever makes any gesture, or any preparation intending or knowing it to be likely that such gesture or preparation will cause any person present to apprehend that he who makes that gesture or preparation is about to use criminal force to that person, is said to commit an assault. Explanation.—Mere words do not amount to an assault. But the words which a person uses may give to his gestures or preparation such a meaning as may make those gestures or preparations amount to an assault.
- 319 of IPC: Hurt.—Whoever causes bodily pain, disease or infirmity to any person is said to cause hurt.
- 320 of IPC: Grievous hurt.
- 324 of IPC: Causing hurt by dangerous weapon.

102. A. Bicuspid aortic valve

Turner's syndrome is characterized by 3 principal features:

1. Short stature.
2. Congenital anomalies like web neck, shield chest, wide-set nipples, cubitus valgus, bicuspid aortic valve (Most common heart defect – 30%), coarctation of aorta (5-10%), septal defect, aortic dissection, osteoporosis, renal abnormalities, red green colour blindness, pigmented navei, short 4th metatarsal, dyslexia, high-arched palate, low-set ears, spina bifida, low posterior hairline, etc.
3. Sexual infantilism: primary amenorrhoea, sterility, grossly undeveloped breast, scanty pubic & axillary hair, infantile vagina, infantile fallopian tubes and ovaries containing fibrous tissue without ovarian follicles(streak ovaries).

103. B. Syphilis

- Early tooth eruption is seen in Syphilis, may be at birth.
- Delayed tooth eruption is seen in;
  - Hypothyroidism (Commonest cause),
  - Hypopituitarism,
  - Rickets,
  - Down's syndrome,
  - Cleidocranial dysplasia,
  - Cysts and
  - Supernumerary teeth.

104. A. Ring fracture + lumbar spine injury

- Ring Fracture is a type of fissured fracture that encircles the base of the skull around the foramen magnum, usually running 3–5 cm outside the foramen magnum at the back and sides of the skull, passing forward through the middle ears and roof of the nose. Such types of fractures are usually noticed in the following cases:

1. Fall from a height on to feet or buttocks, when the force of fall is transmitted upwards through the spinal column.
2. Vault of skull being driven against the spine by falling of heavy load over the vertex or fall from a height on the head or heavy blow over the vertex.
3. Violent twisting of the head on the spine, shearing the vault from the base.
4. A heavy blow directed underneath the occiput or chin causing the fracture by violently lifting the skull from the spine and thereby breaking it away from its basal attachment

- Fractures of the thoracic and lumbar spine may result from high-energy trauma, such as a:
  - Car or motorcycle crash
  - Fall from height
  - Sports accident
  - Violent act, such as a gunshot wound

105. B. Stack's method

- Mile's method: This is used by studying only the root transparency of a tooth after the age of 30 years.
- Boyde's method: Cross striations in the enamel and dentine of deciduous teeth and permanent first molars represent daily incremental lines. Studied by histological sections. The age of an individual can be calculated by counting the number of lines from neonatal line onwards. Neonatal line is considered as an indicator of birth. This method is applicable mainly to infants. The age so calculated is accurate with an error of around 20 days.
- Stack's method: Estimation of the age of infants from the weight and height of the erupting teeth of child. It is used on both deciduous and permanent during their erupting phase.
- Lamendil's method: Estimation of age from using only 2 criteria namely, gingival recession and root transparency.

106. D. 12 months

- Sex chromatin cannot be made out in decomposed bodies.
- But by using fluorescent dyes, Y chromosomes can be demonstrated up to 1 year after death in dental pulp tissue.
- The F-bodies are seen in 30-70% of cells in males.

107. A. 10 ml

The following must be preserved in all cases of suspected poisoning

1. Stomach and its contents
2. Upper part of small intestine (About 30 cm) and its contents
3. Liver - 200-300 gm
4. Kidney - ½ of each, as one kidney may be dysfunctional
5. Blood - 30 ml (Minimum 10 ml)
6. Urine - 30 ml

108. D. 376D of IPC

- 376A IPC - Punishment for causing death or resulting in persistent vegetative state of victim.
- 376B IPC - Whoever has sexual intercourse with his own wife, who is living separately, whether under a decree of separation or otherwise, without her consent, shall be punished with imprisonment of either description for a term which shall not be less than two years but which may extend to seven years, and shall also be liable to fine. Bailable and Cognizable (on complaint of victim).

- 376C IPC - Sexual intercourse by person in authority.
- 376D IPC – Gang rape

109. C. 15 kg

Structure	Constricting force required	Causative effect
Jugular vein	2 Kg	Cerebral apoplexy
Carotid artery	4-5 Kg	Cerebral Anoxia
Trachea	15 Kg	Asphyxia
Vertebral artery	20 Kg	Cerebral anemia

110. C. Abdomen

- The depth of a stab wound is usually equal to or less than the length of the blade that was used in producing it,
- But on yielding surfaces like the anterior abdominal wall, the depth of the wound may be greater than the length of the blade, because the force of the thrust may press the tissues underneath.

111. A. Nicotine

- Nicotine is a alkaloid present in plant Nicotiana tabacum. dried leaves of which are used as tobacco for chewing, smoking and other recreational purposes.
- It is considered a cardiac poison.
- In the habitual smoker, nicotine causes amblyopia, narrowing of the field of vision and some blurring, etc.
- Habitual smoking is reported to lead to tobacco heart - a condition characterised by irregularity, extra systole and occasional attacks of pain suggesting angina pectoris.

112. C. Acetic alcohol

- Supersaturated sodium chloride or rectified spirit is used as a preservative for body viscera.
- Acetic alcohol is used as preservative for maggots. Maggots are killed by dropping into boiling absolute alcohol (so that it dies in extended position) and preserved in Acetic alcohol.
- Dimethyl sulphoxide (DMSO) is used as a preservative for muscle for DNA.

113. A. Ultra violet light

- Latent tattoos are invisible tattoo marks which can be made visible by ultraviolet rays.
- Infrared photography makes old tattoos readily visible
- Regional lymph node biopsy: Previous application of tattoo mark (Latent tattoo) can be determined in a dead body where there will be presence of dye.
- Laser: Is the best method to remove tattoo.

114. C. He must keep the police informed about the findings

- A medicolegal autopsy is to be carried out at the behest of the appropriate legal authority. The request/order may move from the police officer (usually the station house officer or sub-inspector of police) or from magistrate or from Coroner under whose jurisdiction the incidence/ event leading to death occurred.
- A doctor should record all positive findings and important negative ones.
- No autopsy is complete unless all three major body cavities are opened, i.e. cranial, thoracic and abdominal cavities.
- A doctor must preserve viscera and send for toxicology examination in case of poisoning/suspected poisoning/where there are no other findings/when requested by the investigating officer.
- No unauthorised person should be permitted to enter the mortuary. No police official should be present while the autopsy is being conducted and no need to keep the police informed about the findings.

115. C. Sec. 228(A) IPC

- Sec. 327(2) CrPC - The inquiry into and trial of rape or shall be conducted in camera: Provided

that the presiding judge may, if he thinks fit, or on an application made by either of the parties, allow any particular person to have access to, or be or remain in, the room or building used by the court.

- Sec. 357(C) CrPC - All hospitals, public or private, whether run by the Central Government, the State Government, local bodies or any other person, shall immediately, provide the first-aid or medical treatment, free of cost, to the victims of any acid attack or rape, and shall immediately inform the police of such incident"
- Sec. 228(A) IPC - Disclosure of identity of the victim of certain offences etc.—Whoever prints or publishes the name or any matter which may make known the identity of victim of rape shall be punished with imprisonment of either description for a term which may extend to two years and shall also be liable to fine.
- Sec. 166(B) IPC - Whoever, being in charge of a hospital, public or private, whether run by the centeral government, the state government, local bodies, or any other person, contravences the provisions of section 357C of the code of criminal procedure, shall be punished with imprisonment for a term which may extend to one year or with fine or with both.

116. C. Chennai

- First Medico legal autopsy in the world was done by Bartolomeo Varignana, in Italy in 1302.
- First book of Forensic Medicine was written by Furtunato Fedele, an Italian in 1602.
- First Post-mortem examination in India was done by Dr. Buckley in Madras (Present Chennai) in 1663, a case of suspected Arsenic poisoning.

117. B. The fetus can be aborted after her consent

- Vaginal swab is not needed because the rape incidence is not recent.
- Option C is obvious.
- Urine pregnancy test is not necessary.
- Foetus cannot be terminated, because as per MTP Act 1971, pregnancy can be terminated only up to 20 weeks of pregnancy.
- A woman can give consent for termination of pregnancy only after 18 years of age, if termination is indicated.

118. D. Sodium polyanethole sulfonate

- EDTA or Heparin is used as preservative for blood for DNA.
- Sodium / Potassium fluoride, 10 mg/ml (prevents glycolysis, inhibits enzymatic activity and bacterial growth) + K oxalate is used as preservative for blood.
- Sodium polyanethole sulfonate (SPS) is an anticoagulant which is used for blood for culture.

119. A. Full choke

Choking: The degree of dispersion can be controlled to some extent by using a constricting device near the muzzle end, called choke.

Types of Choke	Constriction	% of shots found in 30" circle at 40yards
Full Choke	40/1000 of inch	65 – 70%
¾ Choke	30/1000 of an inch	65%
½ Choke	20/1000 of an inch	60%
¼ Choke	10/1000 of an inch	55%
Improved Cylinder	3-5/ 1000 of an inch	50%
True Cylinder (No Choke)	0/ 1000	30-40%

120. D. Primary rugae are less than 3mm

- Palatal rugae are used as a method of identification. Discovered by

Harrison Allen. Anterior palate (1/3rd) is preferred over posterior part. Palatoprints do not change during growth.

- Thomas & Kotze have classified rugae into 3 types
  - Primary rugae : 5mm or more.
  - Secondary rugae : 3-5 mm.
  - Fragmentary rugae: Less than 3mm.

121. B. Air embolism from putrefactive gas

- Alkaline pyrogallol test helps to differentiate air embolism from putrefactive gases.
- 4 ml of alkaline pyrogallol is taken in a 10ml syringe and air is aspirated from right side of the heart.
- The needle is removed and replaced by a stopper.
- If air (Oxygen) is present, the mixture turns brown on shaking.
- In a second syringe, some air is introduced by the atmosphere and the test is repeated as a control.

122. B. Adherence to the wall

- Differentiation between Ante-mortem and Post-mortem clots:
- The ante mortem clots are firm, rubbery and attached to the vessel wall by lines of Zahn.
- Post mortem clots are soft, friable, having appearance of red currant jelly (red cells)/ yellow chicken fat (serum) and not attached to the vessel wall by lines of Zahn.
- Post-mortem fibrinous clots in the heart are known as Cardiac Polyps.

123. D. 500 grams

- During exhumation, in case of suspected poisoning, 6 soil samples of 500 g each should be taken from each side of the body or coffin, i.e., above the body, below the body, both sides of the body, head end of the body and foot end of the body.
- In addition, at least two samples must be taken from some distance (sample soil) - say around 25 to 30 yards from the grave.
- In suspected mineral poisoning, hair, nails, and long bone e.g., femur should be preserved for chemical analysis.

124. D. Klismaphilia

- Agalmatophilia: Sexual attraction to a statue, doll, mannequin or other similar figurative object.
- Coprolagnia: Sexual pleasure is obtained from the thought, sight, or touching of excrement.
- Mysophilia: Sexual pleasure associated with something soiled or filthy, usually a kind of undergarment after use.
- Klismaphilia: is a paraphilia involving enjoyment of, and sexual arousal from, enemas.

125. B. Endrin

- Organochlorine (OC) compounds are Endrin, Dieldrin, Aldrin, DDT, Gamaxane, BHC, Lindane, Endosulfan, Toxaphene etc.
- These interfere with the nerve impulse transmission.
- There is no antidote available and hence only symptomatic treatment is done.
- Endrin is also called plant penicillin.
- Parathion and TIK-20 are organo-phosphates, and Baygon is a combination of organophosphate and carbamate; for all of these atropine is the drug of choice for poisoning.

126. B. Anaemic Anoxia

Gorden's (Barcroft's) modes of death are

1. Anoxic Anoxia - No oxygen available to the body, e.g., High altitude, Hanging, Strangulation etc.
2. Anaemic Anoxia – anoxia resulting from a decreased concentration of haemoglobin, e.g., Acute haemorrhage, Severe Anaemia, poisoning by Carbon monoxide (Chemical anoxia), nitrates, chlorates, coal tar derivatives etc.
3. Histotoxic /Cellular Anoxia - Poisoning of the respiratory enzyme

systems of the tissues, as in the inhibition of cytochrome oxidase by cyanides; because of the inability of tissue cells to use oxygen, its tension in arterial and capillary blood is usually greater than normal.

4. Stagnant Anoxia - a condition in which there is inadequate blood flow in the capillaries, causing low tissue oxygen tension and reduced oxygen exchange. The condition is associated with shock, cardiac standstill, and thrombosis.

127. B. Barbiturates poisoning

The temperature of the body remains raised for the first two hours up to 1.5°C to 2°C after death, known as post-mortem caloricity.

Conditions resulting in postmortem caloricity:

1. Disturbance of heat regulation
   - Sunstroke
   - Pontine haemorrhage
2. Increased production of heat due to muscular activity
   - Tetanus
   - Strychnine
   - Violent asphyxial deaths (Struggle prior to death)
3. Excessive bacterial activity
   - Septicaemia
   - Cholera
   - Influenza etc.
4. Miscellaneous
   - Alcohol, Heroin, Cocaine, CO poisoning
   - High atmospheric temp., Drug reactions, Fat/Air embolism

128. C. Oxalic acid

- Oxalic acid is present in many plants.
- Plants containing oxalic acid are – Cabbage, unripe carambola, Jack-in-the-pulpit, unripe monster fruit, rhubarb, spinach and wood sorrel.

129. D. All of the above

- Suspended animation (Apparent death) is defined as "a state of body in which the vital functions are at such a low pitch that the body functions cannot be determined by ordinary methods of clinical examination".
- Suspended animation may last for few seconds to half an hour or more. In this condition, actually, the circulation, respiration etc. do not completely stop but is being maintained in their minimum. Prompt resuscitation can revive the state. Apparent death is of two types:

1. Voluntary – Produced voluntarily. Yogis or 'sadhus' or 'sanyasi' may practice this method.
2. Involuntary – person lands in apparent death spontaneously. Involuntary suspension of animation lasting from a few seconds to half an-hour or more may be found in:

A: After Anesthesia
B: in newborn Babies
C: Cholera/Cerebral concussion
D: Drowning.
E: Electrocution

Shock, Sunstroke, Syncopal attack, Insanity, Hypothermia,
Narcotic poisoning, vagal inhibition etc.

130. A. Drowning in a fast flowing river

- Postmortem lividity (hypostasis) is bluish purple or purplish red discoloration, which appears under the skin of the dependent parts of the body after death due to capillo-venous distention.
- P.M. Lividity is not seen in bodies found in running water, as the position of the body is constantly changing in running water.
- Whereas it is seen bodies lying in well, swimming pool or in case of post-mortem submersion.
- In case of hanging, hypostasis is more marked in lower limbs, external genitalia, lower part of arms and forearms (glove and stocking pattern).
- It is more marked in asphyxia and is less marked in death from hemorrhage (> 65% of blood loss in

adults and > 45% of blood loss in infants), anemia, lobar pneumonia (coagulation of blood) and wasting disease.

131. D. 8th month

Age related changes in fetus:

- 4th month: Sex is recognized, lanugo is visible
- 5th month: Vernix caseosa appears on the body
- 6th month: Hair appears on the head
- 7th month: Pupillary membrane disappears
- 8th month : Nails reach the tip of the fingers.

Testicles:

- 6th month : Lies close to kidneys (on psoas)
- 7th month : Left near the external inguinal ring,
- Right near the internal inguinal ring.
- 8th month : Left in the scrotum, Right near the external inguinal ring.
- 9th month: Both in the scrotum.

132. D. Terminal

Forensic ballistics: It is the science dealing with the investigation of firearms, ammunition and the problems arising from their use.

- Proximal/Interior/Internal Ballistics: Physiochemical phenomenon from the time of detonation till the projectile leaves the barrel.
- Exterior/External Ballistics: Study of the projective from the time it leaves the barrel till it reaches the target.
- Terminal/Wound Ballistics: Study of effect of the projectile on the target (Study of wound)

133. B. Arsenic poisoning

- Conditions which retard/delays putrefaction are:
- Wasting disease - Anaemia, severe haemorrhage (decreased blood) & Debility (atrophy of tissue)
- Poisons: Arsenic, antimony and other heavy metals, carbolic acid, zinc chloride, strychnine.

134. B. NO_2

- The chemical processes during putrefaction liberate ammonia, carbon monoxide, carbon dioxide, hydrogen sulphide, phosphorated hydrogen, methane and mercaptans.

135. C. Coagulation of protein

- Pugilistic attitude is also known as Boxing attitude or fencing posture or defence attitude.
- It is due to heat stiffening, i.e., coagulation of muscle proteins, which causes contraction.
- Seen in both in ante-mortem and post-mortem burns.
- It occurs whether the person was alive or not at the time of burns.
- Heat stiffening is due to exposure of the body to temperature above 650C.
- It is seen in those dying due to bums and sudden immersion in boiling liquid.
- In heat stiffening, body assumes a posture of generalized flexion. The body is flexed at all the joints except over the back.

136. A. DMSA

- Only Oral: DMSA (Succimer)
- Only Parenteral: BAL (I.M.), EDTA (I.V.)
- Both Oral + Parenteral: DMPS (I.V.), Penicillamine (i.V.), Desferrioxamine (I.M.)

137. D. Cessation of circulation and respiration

Following death, signs of death appear in the following order:

1. Immediate (somatic death):
   a. Insensibility and loss of voluntary power
   b. Cessation of respiration
   c. Cessation of circulation.
2. Early (cellular death):
   a. Pallor and loss of elasticity of skin
   b. Changes in the eye
   c. Primary flaccidity of muscles.
   d. Cooling of the body
   c. Post-mortem lividity
   f. Rigor mortis

3. Late (decomposition and decay):
   a. Putrefaction
   b. Adipocere formation
   c. Mummification

138. A. Mechanical stimulation

- Zasko's phenomenon - Striking the lower third of the quadriceps femoris muscle about 10 cm. above the patella with a reflex hammer causes an upward movement of the patella because of contraction of the whole muscle. This can be seen up to 1-2 hours after death.
- It is not for Chemical, Electrical or Thermal stimulation.

139. A. Ear drum

- In case of air blast, the most common injury is tympanic membrane rupture. Damage to cochlea is more frequent. Lung is the second common organ to be affected (Blast Lung). Liver is least common to injure.
- The injuries are more serious in Immersion (under water) blast than air blast. Tympanic membrane is ruptured in case of complete submersion. Otherwise most common organ to be injured is the gastrointestinal tract. Injury to lung is less common.
- Solid blast refers to wave energy that spreads through a rigid structure. Most common injuries are skeletal fractures. Fracture of legs and vertebrae is more common. GIT damage is more common than Lungs.

140. B. 24 hours

- For cadaveric transplantation, cornea can be removed from a dead body within 6 hours, skin in 24 hours, bone in 48 hours and blood vessels in 72 hours.
- Kidneys, heart, lungs, pancreas, intestine and liver must be obtained soon after circulation has stopped as they deteriorate rapidly.

141. C. Tertiary flaccidity

- Soon after death, the body goes for a stage of primary flaccidity or primary relaxation. During the stage, death is only somatic, and it lasts for one to three hours. All the sphincters relax and there may be incontinence of urine, semen and faeces.
- After the first stage of primary flaccidity the body goes for a stage of rigidity. This is stage of stiffening and shortening of muscles fibers, known as rigor mortis. Individual cell death takes place at this stage.
- With the onset of putrefaction muscles become soft and flaccid due to breaking down of actomyosin, i.e. the stage of secondary relaxation or secondary flaccidity.
- There is nothing like tertiary flaccidity.

142. C. Strychnine poisoning

- The onset of rigor is early and duration is short in:
  - death from diseases causing great exhaustion and wasting, e.g. cholera, typhoid, tuberculosis, cancer, etc.,
  - violent death as cut-throat, firearm, electrocution, lightening, heat stroke
  - death due to strychnine poisoning.
- Rigor mortis is frequently absent in Septicaemia.
- The rigor mortis sets faster in children, elderly, malnourished individuals.
- Causes delaying the onset of rigor mortis are - severe haemorrhage, pneumonia, apoplexy, deaths from asphyxia, nervous diseases causing paralysis of muscles.

143. C. No effect on floatation of body

- Deep inspiration above the water level has no effect on the floatation of the dead body, because floatation is due to the putrefactive gases.
- Floatation of body in India occurs in about 12-18 hours in summer and 18-36 hours in winter.

144. A. Childless wife nearing menopause

- Pseudocyesis is also known as False or Spurious or Phantom or Hysterical or Imaginary pregnancy.
- In this condition, the woman believes or imagines that she is pregnant when she is not pregnant.
- It is purely psychological.
- It is generally believed that false pregnancy is caused by changes in the endocrine system of the body, leading to the secretion of hormones that cause physical changes similar to those during pregnancy.
- It may be seen in a childless married lady nearing menopause.
- The woman has subjective symptoms of pregnancy in form of enlarged abdomen, breast changes with amenorrhea.
- woman have imaginary thoughts that fetus is growing inside her womb.
- X-ray or sonography can confirm the diagnosis.

145. D. Rate of putrefaction

- According to Casper's dictum, if the environmental factors are same, a daad body decomposes in air twice as rapidly as in water and eight times as rapidly as in earth.
- That means the ratio between putrefaction changes between Air:Water:Earth = 1:2:8

146. D. All of the above

Subdural hemorrhage is commonly seen in:

1. Chronic alcoholics (Due to cortical thinning the veins become taut)
2. Old age (Due to cerebral atrophy the veins become taut)
3. Children (Infantile whiplash syndrome).

147. C. 7 months

Explantion:

At 7th month of intra uterine life of fetus:

- Crown-heel length: 35 cm, Crown – rump length : 23 cm, Foot length : 8 cm, Weight: 900-1200 gram.
- Skin is dusky red, thick and fibrous and covered with vernix.
- The eyelids are separated.
- Pupillary membrane disappeared.
- Scalp hairs are about 1 cm long.
- Nails thick and up to fingertip.
- Meconium in descending colon.
- Left testes near the external inguinal ring and right near the internal inguinal ring.

148. A. Face

- In air (body placed openly), the order of putrefaction is:
  - Abdomen – Chest - Face & Neck - Lower limbs - Upper limbs.
- In water, the order of putrefaction is:
  - Face & Neck – Chest - Upper limbs – Abdomen - Lower limbs

149. A. Ant bite marks

- Antemortem abrasions can be confused with erosion of the skin produced by ants, excoriation of skin by excreta, pressure sores, drying of the skin etc.
- Eczema is a condition where patches of skin become inflamed, itchy, red, cracked, and rough. Blisters may sometimes occur.
- In case of Joule burn there is an appearance of an areola or pale halo around the electric mark. It occurs at the periphery of electric lesion in form of blanched area. This halo occurs due to arteriolar spasm from direct effect of current on vessel wall musculature.
- In case of chemical burns there will be distinctive stains, eschars – moist and soft, slough away readily.

150. D. Brown

A bruise heals by destruction and removal of the extravasated blood.

- At first: Red
- Few hours to 3 days: Blue (deoxyHb)

- 4th Day: Bluish-black to brown (haemo¬siderin)
- 5 to 6 days: Greenish (haematoidin)
- 7 to 12 days: Yellow (bilirubin)
- 2 weeks: Normal

151. C. Aniline

Color changes in post mortem lividity:

Normal	Bluish-purple
Cherry Red	CO (COHb)
Bright Red	Cyanide (OxyHb)
Bright Pink	Hypothermia, Refrigerated body
Dark Brown	Phosphorus, Phosphate
Chocolate/Copper /Reddish brown	Nitrites, Aniline, Potassium chlorate, Nitrobenzene, Potassium bichromate, acetanilide, Bromates
Deep blue	Aniline (in some cases)
Bluish Green	H2S (SulphHb)
Black	Opium
Bronze	Cl. Perfringens

152. A. Diastatic

- Separation of the sutures by blunt force impact can occur only in young persons (before cranial sutural closure). Once the sutures are closed completely, diastatic (sutural) fracture will not occur.
- Gutter Fracture is the name used to indicate a furrow in the outer table of the skull, ordinarily the result of a glancing blow by a missile from a rifled firearm. These are frequently accompanied with comminuted depressed fractures of the inner table of the skull.
- Pond or Indented fractures may be seen in infants where the skull is elastic and usually is produced by forcible compression of the skull by obstetric forceps or impact against some protruding flat object. Fissured fractures may be seen around the periphery of the dent.
- Perforating fractures are nothing but wound of entry and wound of exit, usually seen in case of bullet injury.

153. C. After delivery

- LOCHIA: It is a vaginal discharge seen after delivery, which is as a result of healing process of placental site.
  - Lochia Rubra: First 4-5 days, bright red in colour.
  - Lochia Serosa: Next 4 days, serous and paler in colour.
  - Lochia Alba: After 9-10 days, thicker, scantier and white or yellowish white.
- It disappears in 2-3 weeks.

154. A. Upper end of radius and ulna

- The ossification centers fuse about 1 year earlier in females than males.
- Upper ends of radius and ulna fuse at the age of 16-17 years in males (In females it fuses at 15-16 years).
- In males, lower end of Ulna fuses at 17-18 years, lower end of Radius fuses at 18-19 Years, upper end of femur fuses at 17-18 years and upper end of humerus fuses at 18-19 years.

155. C. Absence of reasonable care

- Professional negligence (Malpractice) is the absence of reasonable care and skill (Act of Commission and/or Act of Omission), or negligence of a doctor in the treatment of a patient, which may result in injury or death.
- Just because a doctor diagnose wrongly because of error of judgement and give wrong medicine, it may not amount to negligence.
- It is up to the doctor whether to accept or reject a patient, but he should not reject on the grounds of caste, colour, religion, nationality etc.

156. C. 4-7 days

Age of abrasions:

- Fresh: Bright red.
- 12 to 24 hours: Lymph and blood dries up leaving a bright red scab.
- 2 to 3 days: Reddish-brown scab.
- 4 to 7 days: Dark brown to Brownish-black scab.

- Epithelium grows and covers defect under the scab.
- After 7 days: Scab dries, shrinks and falls out.

157. D. Medico-legal reports

- Exceptions to oral evidence are:

1) Dying declaration.
2) Expert opinion expressed in treatise.
3) Evidence of a doctor recorded in a lower court.
4) Evidence given by a witness in a previous judicial proceeding.
5) Evidence of Mint officer or any officer of India Security Press.
6) Reports of certain Govt. Scientific experts, such as Chemical examiner, Chief Inspector of Explosives, Director of Fingerprint bureau, Director of Central Forensic Science Laboratory, serologist etc.
7) Public records
8) Hospital Records: Routine entries such as DOA, DOD, Pulse, Temp. etc.
9) When the certificate or document is acceptable to the counsels (lawyer of the accused) without cross-examination etc.

- Medico-legal reports are accepted in a Court of law - only after cross examination, unless the opposite lawyer is willing to accept without cross examination

158. C. ATP-ase

Sequence of enzymes/biochemical markers rising after injury:

- Tissue cathepsin (5-10 min)
- Seretonin (10 min)
- Histamines (20-30 min)
- Esterase and ATPase (within 1 hour)
- Aminopeptidase (2 hours)
- Acidphosphatase (4 hours)
- Alkaline phosphatase (6 hours)

159. B. Undertaker's fracture

- Fracture of C2-C3 is known as Hangman's fracture.
- Undertaker's fracture is caused due to the head falling backwards forcibly after death, which tears open one of the intervertebral disc usually around C-6 and C-7.
- Fracure of C1 is known as Jefferson's fracture.

160. D. Carbon Monoxide poisoning

- After death cornea loses its glistening appearance and becomes opaque.
- Glistening of cornea remains even after death in case of CO and Cyanide poisoning.
- Dimness of cornea before death occurs in Cholera, Uraemia, Narcotic poisoning and wasting disease.

161. C. 3 weeks

Healing of a fracture (Age of a Fracture):

- 12-24 Hours: Clotting of hematoma
- 7 Days: Formation of new vessels, Fibroblasts are seen
- 10 Days: Fibroblasts lay down reticulin and collagen
- 10-14 Days: Hematoma get absorbed
- 2 Weeks: Callus formation
- 3 Weeks: Callus visible on X-ray
- 1 Month: Obliteration of periosteal callus gap
- 2 Months: Callus is formed into hard bone

162. B. Superfoetation

- SUPERFECUNDATION: Super fecundation is the fertilization of two or more ova from the same cycle by sperm from separate acts of sexual intercourse. Heteropaternal superfecundation occurs when two different males father fraternal twins. In common usage, the term superfecundation is often used instead of heteropaternal superfecundation.
- SUPERFOETATION: Superfetation means the fertilization of an ovum from a subsequent ovulation in a woman who is already pregnant. Two fetuses are born either at the same time showing different stages of development, or two fully developed fetuses are born varying from 1-3 months.

- FETUS PAPYRASEOUS (Fetus compressus): In twin pregnancy, one fetus may grow and develop more than other fetus. The second under-developed fetus may get compressed and flattened. Such fetus is termed as fetus papyraseous
- FECUNDATION AB EXTRA: Fertilisation of ova by the semen deposited on vulva or inner aspect of the thigh.

163. C. Transient amnesia and unconsciousness

- Cerebral concussion is a state of temporary unconsciousness immediately following head injury, and is **always followed by amnesia,** and tends to spontaneous recovery.
- Pre-traumatic (retrograde) and post-traumatic (antegrade) amnesia may be present.
- Usually, the duration of retrograde amnesia is quite brief, while the duration of posttraumatic amnesia is more variable (lasting seconds to minutes), depending upon the injury. In severe concussion, the muscles are flaccid, pupils are dilated and non-reacting, pulse is weak and slow and respiration is shallow.

164. B. Middle cranial fossa

In case of fractures of the base of the skull,

- Fracture of the anterior cranial fossa clinically manifested with bleeding from nose/mouth or/and CSF rhinorrhoea, and Raccoon eye.
- Fracture of the middle cranial fossa clinically manifested as bleeding from the ear and Battle's sign (Reddish discoloration on mastoid region).
- Fracture of the posterior cranial fossa clinically manifested as boggy swelling over upper nape of the neck.

165. D. 12 hours

- Sudden death: As per WHO, death is said to be sudden or unexpected when a person not known to have been suffering from a dangerous disease, injury or poisoning is found dead or dies within 24 hours after the onset of terminal illness.

166. D. All of the above

- Ring fracture is the fracture of the base of the skull, typically involving the temporal bone, occipital bone, sphenoid bone, and/or ethmoid bone or sometimes only occipital bone.
- Usually the fracture is seen 3 to 5 cm. away from the foramen magnum.
- Causes of ring fracture are:

1. Fall from height on feet
2. Fall from height on buttocks
3. Fall of heavy object on the vertex
4. Heavy blow on the vertex
5. Heavy blow on the chin.

167. D. Diffuse axonal injury

- Diffuse axonal injury (DAI) is a clinical condition in which there is diffuse injury of the axons with immediate loss of consciousness and coma of more than 6 hours.
  - In mild DAI, there is coma for 6-24 hours.
  - In moderate DAI, there is coma for more than 24 hours, but there are no signs of brainstem dysfunction.
  - In severe DAI, there is coma of more than 24 hours with brainstem signs.
- It occurs in vehicle accidents in 90% of cases and due to falls and assaults in 10% of the cases.
- Histologically, after 12 hours, the cut ends of the axons look club shaped (sausage) and finally appear as round balls known as retraction balls.
- Cerebral concussion is also known as Mild traumatic brain injury (MTBI), or Stunning or Commotio Cerebri.

168. B. Adolescents

- Commotio cordis typically involves young (8-18 years; average age is 15), predominantly male athletes in whom a sudden, blunt, non-penetrating and innocuous-

appearing trauma to the anterior chest results in cardiac arrest and sudden death from ventricular fibrillation.

169. C. Beating on both ears

- Tying Legs & thighs tightly with bamboo sticks is known as Chepuwa.
- Forced standing is known as Planton.
- Telefono refers to beating on both ears.
- Rolling a wooden/iron rod up & down the thighs is known as Ghotna.

170. D. Glycine

Decomposition of bone:
Bones decompose after death in 3-10 years.
Less than 7 amino acids in bone mean time since death is more than 100 years.
First Amino acid to disappear is Proline and Hydroxy-Proline.

Last Amino acid to disappear is Glycine.

171. C. Causes fatal injuries

Wads are present only in shotgun cartridges. The wads

- Separate the projectiles from the propellant.
- Help to obturate the bore effectively.
- The air cushion wad which is impregnated with grease helps to lubricate the barrel
- Prevents heat from the gun powder from fusing or distorting the pellets.
- Acts as piston
- Prevents expanding gases from escaping.
- Allows optimum pressure to develop.

The top wad/ overshoot wad is meant to keep the shots in place.
The wads does not cause fatal injuries.

172. B. Dermal nitrate test

The Gunshot residues on the hand if the person who fired a gun are derived from both primer and gun powder (propellant).
Dermal Nitrate or Paraffin test or Diphenylamine test is used to detect Propellant (Nitrous compound detection).
The primer contain metal compounds which can be detected by

- Harrison and Gilroy Test
- (Neutron Activation Analysis)
- FAAS (Flameless Automic Absorption Spectrometry)
- TMDT (Trace Metal Detection Test)
- SEM-EDX (Scanning Electron Microscope-Energy Dispersion X-Ray) – Best Method.

173. C. 27

A useful rule of thumb is that, the humerus is 20%, the tibia 22%, the femur 27% and the spine 35% of the individual's height in life.

174. C. 340 - 360

Acid phosphatase activity of human semen per ml is 340 - 360 Bodansky units or 2500 – 3500 Angstorm units.
pH of seminal fluid is 7.35 – 7.5.
Seminal stains on clothes can be identified by blue-white colour in the dark on passing Ultraviolet light.

175. C. Equal in all respects

- Mens rea: Guilty mind
- Actus rea: Guilty act
- Mutatis Mutandis: The necessary changes having been made
- Pari Passu: Equal in all respects
- Ultra Vires: Beyond the power / authority/scope

176. B. 12 hours

In living persons, motile sperms are usually seen up to 6 hours and rarely 12 hours after ejaculation into the vagina.

177. A. Ethanol

Typical Embalming Fluid	Use	Proportion
Formalin (40%)	Preservative	1.5 L
Methanol	Preservative	500mL
Phenol	Germicide	50mL
Thymol	Fungicide	5g

Gylcerine	Wetting agent	600 mL
Sodium borate	Buffer	600 g
Sodium citrate	Anticoagulant	900 g
Sodium chloride	Controls pH	800 g
Eosin (1%)	Cosmetic	30 mL
Soluble wintergreen	Perfume	90 mL
Water	Vehicle	Upto 10 L

178. B. Increased fluidity of blood

TRIAD OF ASPHYXIA

1. Cyanosis due to diminished oxygen tension.
2. Patechial haemorrhages due to increased venous pressure.
3. Visceral congestion & edema due to increased capillary permeability.

179. A. Infrared photography

Gunshot residue (GSR) on skin and blood stained cloth can be visualized by Infra-red rays.

In the crime scene, if the blood is washed, the suspected area is sprayed with Luminol (3-amino pthalylhydrazide), which would make entire area glow bluish in the dark.

Comparison microscope is used to examine and compare the secondary characteristics on a bullet.

Ultraviolet light is used to demonstrate seminal stain and also to identify latent tattoo marks.

180. C. Case is kept pending

Under Coroner's Act 1871, previously it was held at Kolkata (Calcutta) and Mumbai (Bombay). However it was abolished in Kolkata way back and was discontinued in April 1978 in Kolkata and on 29 July 1999 in Mumbai.

A Coroner was an Officer of the rank of First Class Magistrate, appointed by State Government.

The Coroner may be a doctor or a lawyer or both.

Under Coroner's Act, the Coroner was empowered to inquire all unnatural or suspicious deaths and death occurring in jail.

After examining a body he then decides whether an autopsy is required and if necessary he holds an inquiry and forward the body to government doctor for postmortem examination.

He had also power to order for exhumation.

Coroner's court is only court of inquiry into the cause of death.

The Coroner examines witnesses on oath and records their evidence.

After completion of an inquiry, the Coroner finds a verdict as to the cause of death. If the coroner finds a verdict of foul play, he issues warrant to the accused concerned and then handed over the case to the Metropolitan Magistrate concerned.

When the accused was not found, the Coroner returns an open verdict (No conclusion).

Open verdict means an announcement of the commission of crime without information regarding the accused.

It is held in U.K., some states in America and some other countries.

181. B. Chloral Hydrate

The chloral hydrate is given in food or drink to render a person suddenly helpless for the purpose of robbery or rape.

It's action is so rapid under such conditions that it has been given the name "knockout drops".

182. C. Mentally ill

Insanity (lunacy or mental unsoundness or mental derangement or mental disorder) is defined as a disease of mind or the personality in which there is derangement or impairment of mental or emotional processes.

The Indian Lunacy Act 1912 defined lunatic as an idiot or a person of unsound mind. However, The Mental Health Act 1987 has replaced the Indian Lunacy Act 1912. The Mental Health

Act 1987 uses the term "mentally ill person" instead of lunatic.

The Mental Health Act defines mentally ill person as "a person who is in need of treatment by reason of any mental disorder other than mental retardation".

Insanity is an old term used loosely to denote any mental disorder or mental illness. The Indian Penal Code employs the term unsoundness of mind while referring to insanity.

It is better to use term mentally ill person (as defined under Mental Health Act 1987) rather than using term such as insane or lunatic.

183. B. 90°-100°

In males subpubic angle is V-shaped, has sharp angle of 70^0 to 75^0.

In females, the subpubic angle is U-shaped, rounded, broader angle, 90^0 to 100^0.

184. B. Lead peroxide

The black powder used as a propellant in firearms consists of

1. K Nitrate (75%): Supplies Oxygen
2. Sulphur (10%): Increases density and makes it more readily ignitable
3. Charcoal (15%): Acts as Fuel

It does not contain lead peroxide.

185. B. 2003

- On 19th September 1964 Ministry of health appointed Mr. Shantilal Shah, Health Minister of Maharastra as Chairman of the committee. In Dec 1966, the committee submitted its recommendations and the Bill was introduced in 1969.
- The Bill was passed in Rajya sabha and Lok sabha on 2nd August 1971.
- The Act was enforced in India except the state of Jammu and Kashmir on 1st April 1972.
- The medical termination of pregnancy rules 1975 stands repealed because medical termination of pregnancy rules 2003 has come into force. It lays down the experience and training for the registered medical practitioners.

1. Any medical practitioner having experience of 3 years in obstetrics and gynaecology or who has completed 6 months housemanship in obstetrics and gynaecology or worked in a hospital in a department of obstetrics and gynaecology for at least one year can perform the MTP.
2. Any registered medical practitioner who has assisted 25 cases out of which five cases he has done independently in a hospital approved by the government can perform the MTP. The registered medical practitioners who have assisted in 25 cases can do only first trimester terminations.
3. Any medical practitioner having diploma or degree in obstetrics and gynaecology can perform MTP

186. A. Tracer Bullet

- In tracer bullet the rear portion of the bullet core is removed and the space is filled with a mixture of barium nitrate and powdered magnesium with strontium nitrate which burns during the plight of a bullet shedding red sparks. It leaves a visible mark or 'trace' while in flight.
- In explosive bullet the bullet tip is grilled and a tiny canister containing Lead azide is inserted. On impact the bullet explodes.
- In Incendiary bullet the tip of the bullet contains white Phosphorous, used to cause fire in the target (e.g., to ignite fuel tank).
- Gyrojets are cartridges or miniature rockets driven by solid fuel, which produces considerable heat and smokeless gas on burning.

187. D. Nitrocellulose

- Smokeless powder is a type of propellant. It may be

1. Single based: Contains only Nitrocellulose.
2. Double based: Contains Nitrocellulose + Nitroglycerine
3. Triple based: Contains Nitrocellulose + Nitroglycerine + Nitroguanidine

- These produce much less flame and smoke and more completely burn than black powder.

188. C. Fouling

- Smudging or blackening in case of firearm wounds is due to the deposition of smoke and soot.
- Peppering or powder stippling or tattooing is due to the partially burnt or unburnt particles of gunpowder.
- When the bullet comes out through the barrel, the metal fragments are scraped off, and these small fragments of metal from the bullet or the barrel impact the skin surface, around the wound of entry, the term 'fouling' is used.

189. C. USA

- Capital punishment in the United Kingdom was used from ancient times until the second half of the 20th century. The last executions in the United Kingdom were by hanging, and took place in 1964, prior to capital punishment being abolished for murder (in 1965 in Great Britain and in 1973 in Northern Ireland). Although unused, the death penalty remained a legally defined punishment for certain offences such as treason until it was completely abolished in 1998.
- The use of capital punishment in Italy has been banned since 1889, with the exception of the period 1926-1947, encompassing the rule of Fascism in Italy and the early restoration of democracy. Before the unification of Italy in 1860, capital punishment was performed in almost all pre-unitarian states, except for Tuscany, where it was historically abolished in 1786. It is currently out of use as a result of the adoption of the current constitution, and defunct as of 1 January 1948.
- Capital punishment is a legal penalty in the United States, currently used by 31 states, the federal government, and the military. The United States is the only Western country currently applying the death penalty, one of 54 countries worldwide applying it.

190. D. 2 weeks

- Frost bite occurs after exposure to extreme cold (less than -2.5°C) temperature or dry cold or from direct contact with cold object (below 0°C).
- In frostbite, skin becomes hard and black in 2 weeks.
- It is commonly seen in mountaineering and polar expeditions.
- Tissue injury results from freezing and vasoconstriction.
- It usually affects the distal aspects of extremities or exposed parts of face such as nose, ears, chin and cheeks.

191. C. 5-6 days

- Changes in Umbilical cord:
  - 2 hours- Blood clots in cut end.
  - 24 hours- Vessel begins to close.
  - 12-24 hours-Cord attached to child shrinks and dries.
  - 36-48 hours-Inflammatory ring at the base.
  - 2-3 days-Mummifies.
  - 5-6 days-Falls off and leaves an ulcer.
  - 10-12 days-Cicatrizes

192. D. Death certificate

- There are certain specific requirements about death certificates.
- If the doctor in attendance is convinced that death is due to any natural cause-

a) He must issue a death certificate

b) He cannot charge any fees for the same

c) He cannot delay it even if his own professional charges are not paid and

d) The certificate must state the immediate cause of death like coronary thrombosis instead of a vague term, such as heart failure or cardiac arrest and the underlying cause due to coronary artery disease.

193. D. None of the above

- Any defence for medical negligence is only for registered medical

practitioner who is authorized to practice modern medicine.

- A quack is not supposed to practice modern medicine; hence the question of defence does not arise.

194. B. Compressed air pushed in front of the current

- According to Spencer there are 4 factors that result in injury in a lightning flash.

1. Direct effect of high voltage current.
2. Burning by super-heated Air.
3. Effect of expanded and repelled air around the flash.
4. Compressed air pushed **before the current** produced by Lightning.

Even individuals quite remote from the flash may sustain injuries due to the effect of compressed air.

195. A. Epidemic Dropsy

- The plant of Argemone Mexicana is known as Yellow Poppy. The oil contains two alkaloids, sanguinarine and dihydrosanguinarine which causes epidemic dropsy.
- In Lathyrus sativus (Kesari Dhal, the active neurotoxic principle is Beta (N)-oxalyl amino alanine-BOAA. The continuous use of sativus produces Neurolathyrism, characterised by progressive spastic paraplegia/ quadriplegia; sphincters sensation and mental faculties are preserved.
- LSD give rise to 'Flashback phenomenon' and 'Bad Trip'.

196. B. Mercury

- Poisons imparting color to urine
  - Green: Phenol, Cresol
  - Orange: Rifampicin, Phenothiazines, Santonin
  - Yellow: Dinitrophenol, Arsine
  - Pink: Aniline, Eosin, Mercury
  - Purple: Porphyrins
  - Brown: Nitric Acid
  - Brown to black: Thymol, Naphthalene
  - Red: Phenolphthalein, Mephensin
  - Blue: Methylene blue

197. C. Deep

- Wilson classified burns into 3 types. They are:
  - Epidermal - Dupuytren's 1st and 2nd degree.

These burns are very painful and heals without scar formation.

- Dermo-epidermal - Dupuytren's 3rd and 4th degree Pain and shock are greater than in first degrees burns (Most painful).
- Deep - Dupuytren's 5th and 6th degree (Relatively painless)

198. B. 20 Lakhs

- District consumer disputes redressal forum can pass a maximum compensation of Rupees 20 lakhs.
- The State consumer disputes redressal forum can pass a maximum compensation of Rupees one crore.
- The National consumer dispute redressal forum can pass a compensation of more than Rupees one crore.

199. A. Acro reaction

- The Acro reaction test is applied for the identification of electric marks by demonstrating metal particles on the skin surfaces by simple colour reactions.
- Current Pearls - Small balls of molten metal, derived from the electrode, may be carried deep into the tissues. It helps to identify the wound of entry.
- Bone Pearls or Wax Drippings - Heat generated by the current may melt the calcium phosphate, which is seen radiologically as typical round density foci, known as, Bone Pearls.

200. A. Prescription of overdose

- Res ipsa loquitor means, the thing speaks for itself.
- This doctrine is applied both in civil and criminal negligence.
- The legal and procedural effect of the Court's acceptance of res ipsa loquitar in a negligence action is to shift the burden of proof from the

plaintiff (patient) to one of disproof by the defendant (Doctor).

- This doctrine cannot be applied against several defendants (i.e. doctors).
- To prove Doctrine of Res ipsa loquitar, the following conditions should be satisfied:

1. That in absence of negligence, the injury would not have occurred.
2. Patient has not contributed to negligence.
3. Doctor had exclusive control of the circumstances or injury

Producing instruments or treatment.

E.g.: Amputation of wrong digit or limb, Leaving a swab or instrument in abdomen of patient after operation, Prescription of overdose etc.

201. B. 10 to 12 days

- Total deprivation of water and food results death in about 10 to 12 days.
- Newborns may survive for 7 to 10 days without food and water.
- If food alone is withdrawn, death may occur in 6 to 8 weeks or even more.
- Death usually occurs when about 70 to 90% of body fat, and 20% of body protein are lost.
- Death usually occurs when 40% of original body weight is reached.

202. C. Drowning

- Gettler's chloride test is used to differentiate fresh water drowning from sea water drowning.
- Normal value of chloride is 600mg% in both chambers.
- In Fresh water drowning, chlorides get reduced by 50% in left ventricle, where as in sea water drowning it get increased by 30-40%.
- Chloride estimation is not of any help after 12 hours.
- It is not helpful in Putrefaction, Patent with Foramen ovale, drowning in Brackish Water.

203. D. Fracture dislocation of upper cervical vertebra

- Judicial hanging causes fracture-dislocation of cervical vertebrae at the level of C2-C3 or C3-C4.
- Bilateral fractures of either the pedicles or laminae of the arch of the second, third or fourth cervical vertebrae occur (Hangman's fracture).
- Rarely dislocation of atlanto-occipital joint or odontoid process of axis may occur.
- With proper Judicial hanging, there is a rupture of the brainstem between the pons and medulla resulting in instantaneous and irreversible loss of consciousness (Due to destruction of reticular formation) and in irreversible apnoea (Due to destruction of the region of respiratory center).
- Asphyxial signs are not seen in properly performed judicial hanging.

204. D. Breslau's second life test

- **Hydrostatic test/Breslau's first life test/Raygat's test:** This test is conducted to know whether the child has breathed or not.
- First, the ligature is tied on the bronchi and lungs are separated.
- Each lung is individually placed in water, then is cut into 12-20 pieces and placed in water to see whether they float or sink.
- A small piece of liver may serve as control.
- If they float, they are each squeezed between thumb and index finger to remove the tidal air.
- If all the pieces float, it indicates that the respiration has taken place.
- If all the pieces sink, it means the child has not breathed.
- If some pieces sink and some pieces float, it indicates partial or feeble respiration.

Stomach-bowel test (Breslau's second life test):

- This is a good corroborative test.
- It is based on the principle that when respiration is established, there is a probability that air is swallowed

and may pass into the stomach and small intestine.

- It is performed by placing double ligatures at each end of the stomach and at different parts of the small intestine.
- The various parts are tested for floatation, and if positive results are shown, they are punctured under water, then the contained may be seen to escape to the surface.
- If no escape, the test is negative.

205. B. Insertion of bullet into stab wound

- In contact shot, the muzzle blast and the negative pressure in the barrel following discharge may suck blood, hair, fragments of tissue and cloth fibers, several cm. back into the barrel called "back spatter".
- Rayalaseema phenomenon: A bullet stuffed into the stab wound of the victim to mislead the police.
- Kennedy's phenomenon: Surgical intervention of gunshot wounds, so that proper evaluation of wounds becomes difficult.
- Souvenir bullet: A bullet which is left in the body for long time. It may get surrounded by fibrous tissue. It may cause chronic lead poisoning.

206. A. Ploucquet's Test

Plocquet's Test:

- The ratio between the weight of the lung and body is, 1:70 before respiration and 1:35 after respiration.

Fodere's/Static Test:

- Before respiration the weight of the lungs is 30-40g, After respiration it will be 60-66g.

Wredin's Test:

- Replacement of gelatinous tissue in the middle ear by air after respiration.

207. B. 5

- The number of members in District and State consumer disputes redressal forum is 3 and the number of members in National consumer dispute redressal forum is 5.
- One Judge and other eminent citizens and amongst them, one should be a female.

208. A. Monocyte

- Karyotyping is the process of pairing and ordering all the chromosomes of an organism, thus providing a genome-wide snapshot of an individual's chromosomes.
- Karyotypes are prepared using standardized staining procedures that reveal characteristic structural features for each chromosome. Clinical cytogeneticists analyze human karyotypes to detect gross genetic changes—anomalies involving several megabases or more of DNA.
- Karyotypes can reveal changes in chromosome number associated with aneuploid conditions, such as trisomy 21 (Down syndrome).
- Careful analysis of karyotypes can also reveal more subtle structural changes, such as chromosomal deletions, duplications, translocations, or inversions. In fact, as medical genetics becomes increasingly integrated with clinical medicine, karyotypes are becoming a source of diagnostic information for specific birth defects, genetic disorders, and even cancers.
- For karyotyping, the cells need to be arrested in the metaphase stage for separating the chromosomes. As the monocytes do not divide, they cannot be used for karyotyping.

209. C. Atelectasis

Fallacies of hydrostatic test:

1. The expanded lungs may sink in cases of diseases such as acute edema, pneumonia, congenital syphilis, etc. or atelectasis.
2. The unexpanded lungs may float due to emphysema, putrefaction or artificial respiration.

210. A. Child fictitiously claimed by a woman

- Suppositious child is a fictitious child, never born to the woman claiming that it is belonging to her.
- A woman may claim for blackmailing, claiming property, breech of promise, marriage etc.

211. D. When fetal heart rate is 160 per min at fifth and 120 per min at ninth month

- Pre-natal diagnostic techniques can be used or conducted when the person qualified to do so is satisfied that any of the following conditions are fulfilled, namely:

1. Age of the pregnant woman is above thirty-five years.
2. The pregnant woman has undergone of two or more spontaneous abortions or foetal loss.
3. The pregnant woman had been exposed to potentially teratogenic agents such as drugs, radiation, infection or chemicals.
4. The pregnant woman has a family history of mental retardation or physical deformities such as spasticity or any other genetic disease.
5. Any other condition as may be specified by the Central Supervisory Board.

212. C. Positive HCG test

- Positive HCG test is only probable sign of pregnancy because this test can be positive even in cases of diseases like chorionic carcinoma & hydatidiform mole and up to two weeks after pregnancy.
- The definite/positive signs of pregnancy are

1. Foetal parts and movements:

Active foetal movements are felt by placing the hands on the abdomen from 16-18 weeks and may be seen by 5th month. Foetal parts such as head and limbs can be distinctly felt after 24 weeks of gestation.

2. Fetal heart sounds:

FHS are heard between 18 and 20 weeks by stethoscope/foetoscope. The fetal heart rate is 160/minute at 5th month and 120/minute at 9th month.

Fetal heart sounds are not felt:

- When the fetus is dead
- When there is excessive quantity of liquor amnii
- When abdominal wall is very fat
- When examination is made before 18 weeks of pregnancy

3. X-Ray:

At 15-16 weeks, fetal parts can be detected with certainty, but occasionally parts are detected as early as 10 weeks. The shadows on X-ray are:

- Crescentic or annular shadow of the skull
- Beaded appearance of vertebrae
- Step ladder pattern of ribs and
- **Irregular linear shadows of limbs**

4. Ultrasonography:

Gestational sac is seen as white ring by 6th week.

Distinct echos from the embryo within the gestational ring by 7th week.

Foetal heart beat can be made out by 10th week.

213. D. Suits for adoption

Legitimacy:

- The fact that any person was born during the continuance of a valid marriage between his mother and any man, or within 280 days after its dissolution, the mother remaining unmarried, shall be conclusive proof that he is the legitimate son of that man, unless it can be shown that the parties to the marriage had no access to each other at any time when he could have been begotten.

Posthumous child:

- Child born after death of a father in a legally married couple.

Orphan child:

- It is a child whose parents are dead.

Affiliation cases (Suits for adoption):

- A woman may allege a particular man to be the father of her illegitimate child and file a case in the court for fixing the paternity.

- As per Sec 125 Cr.P.C., a first class Magistrate can sanction a monthly allowance of any sum depending upon the circumstances of the case for the maintenance of such child.

214. D. Cinderella syndrome

- Battered baby syndrome is also known as:
  - Caffey's syndrome
  - Non accidental injuries of childhood (NAI)
  - Inflicted Traumatic Brain Injury (ITBI)
  - Inflicted Childhood Neurotrauma (ICN)
- A battered child is a child who has received repetitive physical injuries as a result of non-accidental violence, produced by a parent or guardian.
- In addition, there may be deprivation of love, care, affection and nutrition.
- Usually seen in a child less than 3 years, but may be seen up to 5 years of age.
- Incidence is slightly more in males.
- Unwanted child.
- Young parents (20-30years) with low socio-economic status.
- Inconsistent history and findings of physical examination (Mismatch).
- Multiple bruises of different colors in same individual (Different age).
- Shaken Baby Syndrome (Infantile Whiplash Syndrome) is a form of child abuse. Usually occur in children <2 years, but may be seen up to the age of 5 years.
- **Cinderella Syndrome:** False accusation by adopted children of being mistreated or neglected by their adoptive mothers is known as Cinderella syndrome.

215. D. All of the above

BEFORE CERTIFYING THE BRAIN-STEM DEATH ARE:

- The cause of irreversible brain-stem damage (either from a period of hypoxia, trauma, illness or toxic insult) producing non-responsive coma, must be clearly established.
- Following reversible causes must be excluded:
  - Intoxication
  - Depressant drugs
  - Muscle relaxants
  - Primary hypothermia
  - Hypovolemic shock
  - Metabolic or endocrinal disturbances.
- The patient must be examined by a team of doctors at least twice, with a reasonable gap of time in between (say about 6 hours or so).
- None of the doctors who participate in the diagnosis of brain-stem death should have any interest in the transplantation of an organ being removed from the cadaver.
- The structural and functional damage of brain-stem may be diagnosed depending upon the following observations:
  - Dilated fixed pupils, not responding to sharp changes in intensity of incident light.
  - Absence of motor responses within the cranial nerve distribution on painful stimulation.
  - Absence of corneal reflexes.
  - Absence of vestibulo-ocular reflexes.
  - Absence of gag reflex or reflex response to bronchial stimulation by a suction-catheter passed down the trachea.
  - Absence of spontaneous breathing (Apnoea test).

216. B. Increase menstrual blood flow

- **Ecbolics** are the drugs which increase the uterine contractions.
  - Ergot is the most commonly used ecbolic.
  - Others include Pituitary extract, Quinine, Cotton root bark, Diachylon (lead oleate), Gossypium etc.
- **Emmenagogues** act by increasing the menstrual blood, flow and causing expulsion.
  - Sanguinarin, estrogens, senecio, Oil of savin, Borax, Apiol,are chief emmenagogues.

- **Diaphoretics** increase sweating.
  - The excessive sweating can be produced by application ofheat (e.g.: Blankets, Hot water bottles and administration ofhot beverages will cause increased perspiration).
  - The best diaphoretic is Pilocarpine Nitrate, 5 mgsubcutaneously. The other diaphoretics are alcohols,salicylates and Antipyretics
- **Emetics** are the drugs which induce vomiting.

217. A. Heat stroke

- In **heat stroke (Heat hyperpyrexia),** body temperature increases above the level of 41°C. There is absence of sweating. The term 'Thermic fever' or 'Sunstroke' is used when there has been direct exposure to the sun. There is failure of cutaneous blood circulation.
- **Heat cramps (miner's / stoker's/ fireman's cramps)** is caused by rapid dehydration of body through the loss of water and salt in the sweat. Muscle cramp is due to loss of Na+ ion. There is no increase in body temperature.
- **Heat prostration (heat exhaustion/heat syncope/heat collapse)** follows exposure to excessive heat. There is no increase in body temperature. It is due to peripheral vascular collapse. Death is due to cardiac failure.

218. A. Spark burn

Lightning stroke:

It is a flash of lightning is due to an electrical discharge from a cloud to the earth.

Types of Burns

1. Arborescent burns (Filigree/Lichtenberg's flower/Keranographic burns or Feathering):
2. Linear Burns:
   - Irregular, linear, first degree burns may follow skin creases, especially if damp from sweating.
   - Often found in the moist creases and folds of skin.
   - Vary from 3 to 30cm. or more in length and 0.3 to 2.5 cm. in width.
3. Surface Burns:
   - These are true burns and occur beneath metallic objects worn or carried by the person which are fused by the flash.

219. C. Prominent caput succedaneum

- In Precipitate Labour, all 3 stages of labour are merged together and the mother may deliver the baby without her knowledge suddenly.
- The baby may fall into the lavatory pan and die of drowning or suffocation or it may fall on the ground and may die of head injury.
- In case of skull fracture usually it is fissured and limited to parietal bones or may be pond fracture.
- If occurs it is usually seen in multiparae with roomy pelvis and small foetus.
- Caput succedaneum and cephalohematoma are not seen.
- The umbilical cord if torn is torn near the fetal end.

220. D. Retinal injury

- Berlin's edema (commotio retinae) a common condition caused by blunt injury to the eye. It is characterized by decreased vision in the injured eye a few hours after the injury. Commotio retinae is usually self limiting and there is no treatment as such. It usually resolves in 3–4 weeks without any complications and sequelae.
- When an impact is imparted to a mobile head, the site of maximum cortical damage is most likely to be underneath or at least on the same side as the impact. This is so called, 'coup lesion'.
- When a moving head is suddenly decelerated as in case of a fall, though there might be a coup lesion at the site of the impact, there is usually cortical damage on the opposite side of the brain—'contrecoup lesion'.

221. A. 10 bore

- **Bore of a Shot gun:** It is the number of lead balls of equal size and shape which is made from one pound of lead, each ball precisely fitting the barrel.
- For example, 12 bore shotgun means, 12 balls of equal size and shape have been prepared from one pound of lead, each ball is precisely fitting the the interior of the barrel. Greater the bore lesser the lumen of the barrel.

222. B. 80%

- The percentage of fetal haemoglobin at
  - 5th month : 94%,
  - Birth : 80%,
  - 3 months : 7-8%,
  - 6 months : 0

223. A. Electrolyte imbalance

- Secondary Drowning (Post-immersion syn¬drome or Near Drowning or Delayed Drowning) is not drowning in true sense but a complication or sequelae of submersion.
- The submersion victim is resuscitated and survives for 24 hours, but develop complications like hypoxemia resulting in brain damage, electrolyte imbalance, pulmonary edema, hemoglobinuria, sepsis, metabolic acidosis, chemical pneumonitis, cerebral edema, cardiac arrhythmias etc.
- The most common cause of death is electrolyte imbalance.

224. D. Testamentary capacity

- **Curren's rule** states that "an accused person will not be criminally responsible, if at the time of committing the act, he did not have the capacity to regulate his conduct to the requirements of law, as a result of mental disease or defect".
- **Vicarious liability** is a legal doctrine that assigns liability for an injury to a person who did not cause the injury but who has a particular legal relationship to the person who did act negligently. It is also referred to as imputed negligence.
- **Testamentary capacity** (Testament = will) is the mental ability of a person to make a valid will.
- To make a valid Will, it should have following components:
  - He should be major.
  - The person should be of sound mind.
  - The person making Will should understand the nature of Will.
  - The person should have knowledge of his property that has to be disposed of.
  - The person should recognize the individuals who have moral claims to heir his property.
- **McNaughten's rule**: An accused person is not criminally responsible, if it is proved that, at the time of committing the crime that he was suffering from such a defect of reason from disease of mind that he did not know the nature and quality of act he was doing or if he did know this that he did not know that what he was doing was wrong.

225. C. Saliva

- Phadebas test and/or Starch-Iodine Test/Alpha-Amylase (or α-Amylase) test are used to detect Saliva and can be confirmed by the Presence of buccal squamous cell.
- Presence of Colostrum: By the detection of Trypsin inhibitor.
- Presence of Milk: By the detection of Casein and Lactose.
- Chemical tests to detect urine from the stains depend on the presence of Urea and creatinine.

226. B. Distal aspect

- In Explosive bullet, the bullet tip is grilled and a tiny canister containing Lead azide (a primer) is inserted.
- On impact the bullet explodes.

227. D. Scopolamine

- Narcoanalysis is a procedure of

investigation of mental content of a person done after application of a light general anaesthetic drugs.

- This investigative technique is based on the principle that at a point very close to unconsciousness, the subject would be mentally incapable of resistance to questioning and incapable of inventing falsehood that he has used to conceal his guilt.
- Drugs commonly used are

1. Thiopentone sodium (Na Pentothal)
2. Scopolamine hydrobromide
3. Sodium seconol
4. Sodium amytal
5. Benzodiazepines

228. A. Brain fingerprinting

- Brain fingerprinting is invented by Lawrence Farwell.
- It is a technique that uses electroencephalography (EEG) to determine whether specific information is stored in a subject's brain by measuring electrical brainwaves and recording a brain response known as a P300-MERMER (memory and encoding related multifaceted electroencephalographic response) in response to words, phrases, or pictures that are presented on a computer screen.

229. A. Hanging

- Red stripes of bleeding into the outer layers of intervertebral discs of lumbar vertebrae may be seen in bodies suspended for a long time, known as Simon's hemorrhages.
- It may be seen not only in case of hanging, but whenever dead body is suspended for a long time.

230. C. Filicide

- Feticide: Killing of a fetus at any time prior to birth.
- Neonaticide: Killing of a child within 24 hours of its birth (As per medical journals).
- Filicide: Killing of a child by its own parents.
- Infanticide: Deliberate killing of a child below the age of 1 year.

231. C. CSF

- 80% of the human population are secretors and 20% are non-secretors.
- The secretors secrete ABO antigen in all their body fluids except in CSF.

232. B. Acid dilution test

- **Presumptive tests for blood are:**
  - Benzidine test,
  - Phenolphthalein test,
  - Leucomalachite green test,
  - Orthotolidine test and
  - Luminol spray test
- **Confirmatory tests for blood are:**
  - Microscopic examination,
  - Teichmann's Haemin crystal test,
  - Takayama's haemochromogen crystal test,
  - Spectroscopic examination,
  - Electrophoresis and
  - Chromatography.
- **For grouping in old blood stains,**:
  - Acid dilution test or Latte's crust method
- **Precipitin test** is to identify the species of the blood stain/tissue.

233. D. Barberio's test

- Marsh test is used to detect Arsenic.
- Phenolphthalein test is used to detect blood.
- Paraffin test is used to detect gun powder residues from the hand.
- Barberio's test, Florence's test, Acid phosphatase Test, Zinc test, Fluorescence test, Microscopy & Precipitation reaction, ELISA, Prostate specific antigen (P 30) are used to detect semen.

234. C. Datura

- The Datura fruits are spherical and have sharp spines (thorn- apple).
- They contain 0.2 to 1.4% of hyoscine (scopolamine), hyoscyamine and traces of atropine.

- The pollen derived from Datura can cause unilateral mydriasis, known as Cornpicker's pupil.

235. D. More than 5 years

- According to the transplantation of Human organs act 1994, the punishment for removal of human organ without authority is
  - Imprisonment for a term which may extend to 10 years and with fine which may extend to Rs.20,00,000.
  - Removal of the name of the medical practitioner from the register of the Council for a period of 3 years for the first offence and permanently for the subsequent offence.
- Punishment for commercial dealings in human organs:
  - Imprisonment for a term which shall not be less than 5 years but

which may extend to 10 years and shall be liable to fine which shall not be less than Rs.20,00,000 but may extend to Rs.1,00,00,000.

236. B. Kerosene poisoning

Contraindications for gastric lavage are:

- All corrosives except Carbolic acid
- Mechanical poisons
- Esophageal varices
- Haemorrhagic diathesis
- Comatose patients
- Impaired gag reflex
- Volatile poisons
- Marked hypothermia
- Significant electrolyte imbalance
- Severe heart disease
- Advanced pregnancy

237. A. Ciguatera fish poisoning

- Ciguatera fish poisoning: Caused by eating reef fish, which produces ciguatoxin which alters the Na+ permeability giving rise to reversal of hot/cold temperature perception.
- Gymnothorax poisoning: By eating Moray eels, giving rise to prominent abdominal breathing & absent thoracic breathing.
- Scombroid food poisoning: Caused by eating spoiled fish. The histidine is converted into histamine giving rise to Allergic Reaction.
- Sweet clover disease: The coumarin present in the sweet clover is converted into Vit. K antagonist dicoumarol giving rise to haemorrhagic disease.

238. C. Obtain a court order and vaccinate him

- Article 21 in The Constitution of India provides Protection of life and personal liberty - No person shall be deprived of his life or personal liberty except according to procedure established by law.
- Accordingly, as there is a high risk of him spreading disease to his patients, better to vaccinate him after taking an order from the court of law.

239. D. Acute renal failure

- Crush syndrome occurs if a large bulk of muscles is crushed, as in case of vehicular run-over injury or by falling masonry.
- Crushing of muscles can liberate haeme and myoglobin which can enter the circulation and get excreted through the kidneys.
- This can lead to Acute Tubular Necrosis.
- Death may occur in a week's time.

240. B. Methylenedioxyamphetamine

- Ecstacy: MDMA (Methy lenedioxy methamphetamine)
- Love drug: MDA (Methy lenedioxy amphetamine)
- Eve: MDEA (Methy lenedioxy ethamphetamine)
- Date rape drugs: Gama Hydroxy Butyric Acid (GHBA), Flunitrazepam

(Rohypnol), Alcohol, ketamine

241. D. Cyanide

Diagnostic odour of various poisons

Odour	Drug/ Poison
Garlicky	Arsenic, P, OP, Thallium, Selenium, Tellurium
Bitter almond	Cyanide, Prussic Acid
Burnt rope	Cannabis
Fishy/musty	ZnP, AlP (Garlicky also)
Rotten egg	H2S, Disulfiram, Carbon disulphide, NAC
Shoe polish	Nitrobenzene
Acetone (Apple like)	Chloroform, Ethanol, Isopropanol
Acrid (Pear like)	Chloral hydrate, Paraldehyde (C > P)
Wintergreen	Methyl salicylates
Moth balls	Camphor, Naphthalene
Hospital odour	Carbolic acid
Carrot/Mousy	Hemlock (Conium)
Sewer Gas smell	H2S
Kerosene	Organophosphates

242. A. Liver

- Arsenic is rapidly cleared from blood.
- 100mg of arsenic in 24 hours urine indicates toxicity.
- In the early stages, arsenic is found in greatest quantity in liver, followed by Kidneys and Spleen.
- When acute arsenic poisoning is suspected, an X-ray of the abdomen may reveal ingested arsenic, which is radiopaque.
- Urinary arsenic should be measured in 24-hour specimens collected after 48 hours of abstinence from seafood ingestion. Normal levels of total urinary arsenic excretion are less than 50 µg/dl, excretion of 100 µg or more per day is indicative of poisoning. Urine becomes positive within 6 hours of poisoning and may continue to be positive for about a couple of weeks.
- The greatest concentration of arsenic is found in hair and nails. Its deposition in hair may begin in 15 days after administration.
- It is found in the Muscles for days; in the bones, and in the keratin tissues – Hair, Nails and Skin for years.

243. C. Tertiary blast injury

Blast injuries are divided into the following 4 categories:

1. Primary: Caused solely by the direct effect of blast overpressure on tissue.
2. Secondary: Caused by flying objects that strike people.
3. Tertiary: Caused by high-energy explosions. Displacement of air by the explosion creates a blast wind that can throw victims against solid objects;
4. Quaternary: All other injuries not included in the first three classes. These include flash burns, crush injuries, and respiratory injuries

244. A. Carotid artery

- Nearer the vessels to heart, the better the results, specially for drainage.
- Most commonly used artery is common carotid (Usually right).
- Axillary and femoral arteries are also used.
- The corresponding veins are used for drainage.

245. A. Dhatura

- Drugs causing miosis are:
  - Barbiturates, Benzodiazepines, Carbamates, Caffeine, Carbolic acid, Nicotine, Opiates and Organo-phosphates
- Drugs causing mydriasis are:
  - Alcohol, Amphetamines, Antihistamines, Cocaine, CO, Cyanide, Datura, and Ephedrine

246. B. Lesser curvature and pylorus

- The pathway of acids and alkalis in food filled stomach starts along the lesser curvature of the stomach and leads to the pylorus, which explains the location of greater damage in the food filled stomach.

- Stomach without food tend to have significant injury in the lower half to two-thirds and may have sparing of the fundus.

247. C. The member of child welfare committee

- As per POCSO, once it has come to knowledge that a crime has been committed against a child, the child should be taken immediately for a medical examination.
- The examination must be conducted by a registered medical practitioner at a government hospital or a hospital run by a local authority, within 24 hours from the time of receiving information about an offence.
- This can be conducted, irrespective of whether an FIR has been filed or not.
- In the case of a girl child, the examination must be conducted by a woman doctor.
- The examination must be conducted in the presence of a parent or any other person that the child trusts.
- In case such a person is not present, the head of the hospital should appoint a lady who can stand in.

248. C. 40-50%

- 0-10% - No appreciable symptoms.
- 10-20% - Breathlessness on exertion, mild headache.
- 20-30% - Throbbing headache, disturbed judgment, defective memory and rapid fatigue.
- 30–40% - **Cherry red coloration**, severe headache, nausea & vomiting.
- 40-50% - Symptoms may resemble alcoholic intoxication.
- 50-60% - Produces syncope or coma with intermittent convulsions.
- 60-70% - Increasing depth of coma with incontinence of urine and faeces
- 70-80% - profund coma with depressedor absent reflexes, a weak thread pulse, shallow and irregular respirations and death.
- Above 80% - Rapid death from respiratory arrest

249. C. Semicarpus anacardium

- The juice of semecarpus anacardium (Marking nut juice) is used to produce artificial bruises because it simulate a bruise.
- Madar juice (derived from calotropis) and juice from plumbago is also sometimes used to produce artificial bruises.
- Abrus precatorius and ricinus communos contain toxalbumen which is haemolytic in nature.
- Capsicum (chilli) may cause a condition known as Hunan hand (Burning hand).

250. A. Less than 150 microgram / litre

Diagnosis of chronic lead poisoning:

1. Complete blood count and peripheral smear
2. FEP (Free Erythrocute Protoporphyrin) and ZnP (Zinc Protoporphyrin) levels (> 50 µgm/ 100 ml)
3. Blood lead level: Permissible blood level is 35 µgm/100ml (Chelation therapy be considered when a child has a blood lead test result greater than or equal to 45 µgm/100ml).
4. Urinary lead (>150µgm /litre) and Urinary ALA and Coproporphyrins.
5. Punctate basophilic RBCs : > 200 cells/Cu mm.

251. D. Flowering tops

Cannabis is used in the following forms:

1. Ganja (Marijuana, Marihuana, Mary Jane, Pot, Weed, Grass, Reefer, PURPLE HAZE): Prepared from the flower tops of female plant (15-25% of THC)
2. Bhang: it is prepared from the dried leaves and fruit shoots (Ieaves*). It is mildest and contains 15% of THC.
3. Majun: it is a sweet prepared with bhang.
4. Charas or hashish (Most potent): it is the resin exuding for the leaves and stems of the plant. It contains 25-40% of active principle.

Hashish oil is most potent of all cannabis preparations and contains up to 60% of THC.

252. B. Immediately after death, the body may lengthen by about 2-3 cm

- In a dead body, soon after death due to primary relaxation of the muscles, the body length may be more by 2–2.5 cm.
- Later, when rigor mortis develops, it may be shortened.
- With the passage of rigor mortis and onset of putrefaction, the length may change due to secondary relaxation.
- The height varies in the various hours of the day, being maximum in the morning and less by 1.5 to 2 cm in the evening due to reduction of elasticity of intervertebral discs.

253. D. Increased BP

Signs and symptoms of Aconite (Sweet Poison/Meetha Zehar) are:

- **Tingling and numbness** in the mouth and later all over the body
- **Salivation,** dysphagia,
- Profuse sweating, **subnormal temperature**,
- **Hypotension,**
- Initial tachycardia followed by bradycardia.
- Alternate dilatation and contraction of pupil, called HIPPUS.

254. D. Alkalis

Contraindications for NaCl	Contraindications for rectified spirit
Mineral acids	Phenol
Alkalis	Kerosene
Corrosive sublimate	Formic acid
Aconite	Acetic acid
	Formaldehyde
	Paraldehyde
	Chloroform
	Ether
	Chloral hydrate
	Alcohol
	Phosphorus

255. B. Belly scales are incomplete

Trait	Poisonous	Non-Poisonous
Belly scales	Cover the entire breadth	Does not cover the entire breadth
Head scales	Small	Large
Teeth	2 long fangs	Multiple small teeth
Tail	Compressed	Not much compressed
Habits	Nocturnal	Not so

256. A. Heroin + Cocaine

- Speed ball: Heroin + Cocaine
- Hot shot: Heroin + Strychnine
- Crack: Cocaine + Baking soda
- Micky Finn: Alcohol + Chloral hydrate.

257. C. Alcohol

- According to Widmark's formula, a=cpr

a – Weight of alcohol in g.

c – Blood alcohol concentration in mg/kg

p – Body weight in Kg

r - constant and its value is 0.68 for males and 0.55 for female

- For Urine analysis the formula is a=3/4 prq, q is alcohol concentration in urine in mg/kg.

258. C. Osmium dye

The different dyes used are

- Black: Indian ink, Carbon (soot)
- Red: Cinnabar, Vermillion (Mercuric Sulfide)
- Green: Chromic Acid
- Blue: Indian ink, China ink, Indigo, Cobalt, Prussian blue, Ultramarine
- Gold/Platinum Chloride is used for corneal tattoo – Jet black stain.

259. B. It is the method to conclusively fix the paternity

- Blood grouping helps to solve paternity problems, but does not conclusively fix paternity.
- DNA Profiling (Fingerprinting) provides absolute certainty and is a

fool proof method to conclusively fix paternity.

- Comparing the blood grouping helps to certain extent in case of exchange of babies in maternity hospitals, to match the fragmentary remains of skeleton and to compare the blood stains on the weapons.

260. C. Hypothermia

- Signs and symptoms at the site of the sting may include: Pain, which can be intense, Numbness and tingling in the area around the sting and slight swelling in the area around the sting.
- Victims having envenomed by a scorpion suffer a variety of pathologies, such as irritability, hyperthermia, vomiting, profuse salivation, lacrimation, tremor, and convulsion, High blood pressure (hypertension), Accelerated heart rate (tachycardia) or irregular heart beat (arrhythmia).

261. A. Distended

- In case of starvation, gall bladder is distended with bile as the bile is not used.
- The heart is small from brown atrophy, and chambers are empty.
- Brain is the only organ which does not show reduction in size and weight.
- Loss of adipose tissue from omentum, mesentery and peri-renal fat stores.
- Gut is empty and filled with gas. The wall is contracted and translucent from stomach to colon. The walls of the intestine may appear like **Tissue paper** (considered to be the sure sign).
- Faecoliths are usually present and may ulcerate the intestinal linings.
- Bones may show features of demineralization. Stress fractures are present.
- All the organs shrink except Brain.

262. D. Gas chromatography

The various tests for estimation of Alcohol

- Macro Method :- Hine and Kozelka method (Color/Spot Test)
- Micro Method: Cavett's Test
- Chemical methods: Based on principle of Reduction of Potassiumdichromate
- Breath analyser test is based on Henry's Gas law; the residual alcohol in mouth takes about 20 minutes to disappear and within this period breath analyser test may be false positive
- Gas Chromatography is the most desirable method for medico legal purpose.

263. D. Zinc

- Metal Fume Fever (Monday fever, Foundry fever, Brass chills, Brazier disease, Smelter shakes) is caused by the inhalation of fumes while melting metals.
- All the metals may give rise to metal fume fever on exposure to fumes but it is most common in case of zinc.
- The symptoms are fever, chills and malaise.

264. A. Skull

- In case of healing of skull Fracture healing occurs without the formation of visible callus.
- The edges of fissured fracture stick together within a week.
- The edges are slightly eroded and the inner surface of the skull may show pitting or deposition of lime salts in 14 days.
- The edges become slightly smooth and bands of osseous tissue run across the fissure in 3 to 5 weeks.
- If the edges are not in apposition, they become quite smooth in 3 months.
- If there is much loss of bone, the gap is filled only with fibrous tissue.

265. D. All of the above

Psychiatric manifestations of chronic alcoholism are:

1. Delirium Tremens: It occurs in chronic alcoholics due to
   - Acute intake of large bout of alcohol
   - Sudden withdrawal of alcohol
   - Shock from injury, e.g., Fracture of a bone
   - Acute infection, e.g., Pneumonia, Influenza etc.
   - Expossure to cold Etc.
2. Korsakoff's Psychosis:
   - Confabulation, Hallucinations, Disorientation, Multiple neuritis, Amnesia, Lack of insight.
3. Marchiafava Bignami Disease (Demyelinization of nerves-corpus callosum)
   - Ataxia, disarthria, hallucinations, epilepsy
4. Wernicke's encephalopathy:
   - Global confusion, Ophthalmoplegia, Ataxia, Peripheral Neuropathy

266. D. Person who can tolerate high doses of arsenic after taking arsenic in low doses at frequent intervals

- Arsenophagists are people who take arsenic daily as tonic or as an aphrodisiac and they acquire a tolerance of up to 300mg. or more in one dose.

267. A. Mecamylamine

- Mecamylamine is also known as Inversine, is a specific antidote given orally in case of nicotine overdose.
- In mild to moderate poisoning Atropine and Hexamethonium can be given to counteract peripheral autonomic disturbances and as respiratory stimulant.

268. D. Colubridae

Sl. No.	Family	Toxicity	Examples
1	Elapidae	Neurotoxic	Common Cobra, Common Krait
2	Viperidae	Haemotoxic	Russell's viper & Saw-scaled viper
3	Crotalidae	Haemotoxic	Rattle snake, Pit viper
4	Hydrophidae	Myotoxic	Sea Snakes
5	Colubridae	Non toxic	Bird Snake, Boom slang, Checkered keelback

269. B. I.V. Injection

- I.V. injection of mercury results in a condition called, Mercurialism which is characterised by
  - Thrombophlebitis
  - Granuloma
  - Pulmonary embolism

270. D. Cardiomyopathy

- Poisoning by cadmium causes golden yellow staining of teeth, proteinuria and painful bone lesions known as "Ouch-Ouch Disease.
- Cobalt is added in the beer to give more foam, and excessive drinking of beer may cause Cardiomyopathy, known as Beer Drinker's Syndrome.

271. B. Narcotine

Opium contains two chemically different groups of alkaloids, namely:

1. Phenanthrenes (Narcotic)
   - Morphine 10%
   - Codeine 0.5%
   - Thebaine 0.3% (can cause convulsions)
2. Isoquinolines (Non-narcotic)
   - Papaverine 10%
   - Narcotine 6%

272. B. There is no antidote

- Ethylene glycol is mainly used as an anti-freeze agent.
- It is metabolised to glycoaldehyde, glycolic acid and oxalic acid.
- Treatment includes gastric lavage, calcium gluconate, ethyl alcohol, 4-Methyl pyrazole and hemodialysis.

273. C. 317 IPC

- **Sec. 315 IPC -** Act done with intent to prevent child being born alive or to cause it to die after birth.—Whoever before the birth of any child does any act with the intention of thereby preventing that child from being born alive or causing it to die after its birth, and does by such act prevent that child from being born alive, or causes it to die after its birth, shall, if such act be not caused in good faith for the purpose of saving the life of the mother, be punished with imprisonment of either description for a term which may extend to ten years, or with fine, or with both.
- **Sec. 316 IPC -** Causing death of quick unborn child by act amounting to culpable homicide.—Whoever does any act under such circumstances, that if he thereby caused death he would be guilty of culpable homicide, and does by such act cause the death of a quick unborn child, shall be punished with imprisonment of either description for a term which may extend to ten years, and shall also be liable to fine. Illustration A, knowing that he is likely to cause the death of a pregnant woman, does an act which, if it caused the death of the woman, would amount to culpable homicide. The woman is injured, but does not die; but the death of an unborn quick child with which she is pregnant is thereby caused. A is guilty of the offence defined in this section.
- **Sec. 317 IPC - Exposure and abandonment of child under twelve years, by parent or person having care of it.**—Whoever being the father or mother of a child under the age of twelve years, or having the care of such child, shall expose or leave such child in any place with the intention of wholly abandoning such child, shall be punished with imprisonment of either description for a term which may extend to seven years, or with fine, or with both. Explanation.—This section is not intended to prevent the trial of the offender for murder or culpable homicide, as the case may be, if the child dies in consequence of the exposure.
- **Sec. 318 IPC - Concealment of birth by secret disposal of dead body.**—Whoever, by secretly burying or otherwise disposing of the death body of a child whether such child die before or after or during its birth, intentionally conceals or endeavours to conceal the birth of such child, shall be punished with imprisonment of either description for a term which may extend to two years, or with fine, or with both.

274. B. 20-50% of normal

- Normal level of cholinesterase is 4,000 to 11,000 I.U.
- Signs and symptoms start only when the ChE level falls below 50% of normal.
  - Mild Poisoning: 20-50% of normal
  - Moderate Poisoning:10-20% of normal
  - Severe Poisoning: <10% of normal

275. D. Air embolism

Cause of death in burns:

Immediate to within few hours

- Primary shock- Neurogenic shock - due to pain
- Asphyxia – inhalation of smoke, suffocation Within first 48 hours
- Secondary shock – loss of fluid from burnt region 3-4 days
- Toxaemia – absorption of various metabolite from burnt region 4-5 days and later
- Sepsis, Gastric ulceration, Oedema of glottis, acute renal failure, Gangrene, Pulmonary embolism, ARDS, tetanus Years after
- Malignant transformation of burn scar (Marjolin's ulcer)

276. C. Blood gets clotted after death

- CO blocks Cytochrome – A3 Oxidase and P450
- Death is due to Anemic anoxia/ chemical asphyxia.

- Blood remains fluid without clotting.
- There will be bilateral symmetrical necrosis and cavitation of the lenticular nuclei and punctiform haemorrhages in the white matter of brain.

277. A. CO

- Sewer gas contain Hydrogen sulphide, carbon dioxide and Methane.
- Amyl nitrite and Sodium nitrites are given as antidotes.

278. A. DMPS

- DMSA (Dimercapto-succinic acid) also known as SUCCIMER is similar to BAL in chelating properties.
- It is superior to EDTA in the treatment of Lead poisoning.
- It can be given in Glucose-6-PD deficiencies.
- It is less nephrotoxic.
- It is used against Lead, Mercury and Arsenic poisoning. Dose is 10 mg/kg orally every 8 hours for 5 days followed by the same dose every 12 hours for 14 days.
- A combination of DMSA and EDTA is said to be more effective.

279. B. Croton

- A toxalbumen or phytotoxin is a toxic protein, which resembles a bacterial toxin in action and causes agglutination of red cells with some haemolysis and is antigenic in nature.
- The toxalbumen is present in Abrus precatorius (Abrin), Ricinus communis (Castor plant – Ricin) and Croton tiglium (Crotin).
- Oil cannot be extracted from abrus.
- The castor oil doesn't contain ricin, only the press cake contain ricin.
- But in case of croton tiglium, both croton oil and press cake contain crotin.
- Oil from jetropa is used as bio-diesel.

280. B. Common krait

The identifying features of snakes are:

1. Common cobra:
   - Hood with spectacle mark.
   - 3rd supralabial touches both eye and nostril
2. Common krait:
   - 4th infralabial is the largest
   - Dorsal central row of hexagonal scales.
3. Russel's viper:
   - Triangular head with narrow neck
   - 3 rows of diamond shaped marks on the back

281. C. 70

W.H.O. Classification of Mental Retardation	
Mild mental retardation	50 –70
Moderate mental retardation	35 – 49
Severe mental retardation	20 – 34
Profound mental retardation	< 20

Mental Retardation is **presently known as iIntellectual disability (ID),** also called intellectual development disorder (IDD) or general learning disability.

282. A. 1-c; 2-a; 3-d; 4-b

- Brain mapping (fMRI) is discovered by Seiji Ogawa. The primary form of fMRI (Functional magnetic resonance imaging) uses the blood-oxygen-level dependent (BOLD) contrast. It is based on uptake of oxygen in the brain cells in response to questionnaire.
- Dr. Kary Banks Mullis invented Polymerase Chain Reaction (PCR).
- Brain fingerprinting is invented by Lawrence Farwell. It is a technique that uses electroencephalography (EEG) to determine whether specific information is stored in a subject's brain by measuring electrical brainwaves and recording a brain response known as a P300-MERMER (memory and encoding related multifaceted electroencephalographic response) in response to words, phrases, or pictures that are presented on a computer screen.
- Dr. Alec Jeffrey in 1985 developed DNA fingerprinting.

283. B. Increase in the size of testis

Tanner's sexual maturity rating

Genitals (male)

Tanner I

- Testicular volume less than 1.5 ml;
- Small penis of 3 cm or less (prepubertal) (typically age 9 and younger)

Tanner II

- Testicular volume between 1.6 and 6 ml; skin on scrotum thins, reddens and enlarges;
- Penis length unchanged (9–11)

Tanner III

- Testicular volume between 6 and 12 ml; scrotum enlarges further;
- Penis begins to lengthen to about 6 cm (11–12.5)

Tanner IV

- Testicular volume between 12 and 20 ml; scrotum enlarges further and darkens;
- Penis increases in length to 10 cm (12.5–14)

Tanner V

- Testicular volume greater than 20 ml; adult scrotum;
- Penis of 15 cm in length (14+)

Pubic hair (both male and female)

Tanner I

- No pubic hair at all (prepubertal) (typically age 10 and younger)

Tanner II

- Small amount of long, downy hair with slight pigmentation at the base of the penis and scrotum (males) or on the labia majora (females) (10–11.5)

Tanner III

- Hair becomes more coarse and curly, and begins to extend laterally (11.5–13)

Tanner IV

- Adult-like hair quality, extending across pubis but sparing medial thighs (13–15)

Tanner V

- Hair extends to medial surface of the thighs (15+)

BREASTS (FEMALE)

Tanner I

- No glandular tissue; areola follows the skin contours of the chest (prepubertal) (typically age 10 and younger)

Tanner II

- Breast bud forms, with small area of surrounding glandular tissue; areola begins to widen (10–11.5)

Tanner III

- Breast begins to become more elevated, and extends beyond the borders of the areola, which continues to widen but remains in contour with surrounding breast (11.5–13)

Tanner IV

- Increased breast size and elevation; areola and papilla form a secondary mound projecting from the contour of the surrounding breast (13–15)

Tanner V

- Breast reaches final adult size; areola returns to contour of the surrounding breast, with a projecting central papilla. (15+)

284. C. Less than 2 year

- Punishment for a doctor or medical person who misuses the techniques for sex selection as per PCPNDT Act is:
  - First offence:
    - 3 years imprisonment and/or fine up to Rs.10,000 and
    - Suspension of Registration by the Medical Council for 5 years.
  - Subsequent offence:
    - 5 years imprisonment and/or fine Rs.50,000 and
    - Permanent removal of Registration by the Medical Council.

285. A. 80% of cases

In case of Hanging, the ligature mark is situated

- Above the level of thyroid cartilage in: 80% of cases
- At the level of thyroid cartilage in: 15% of cases

- Below the level thyroid cartilage in: 5% cases

286. B. Eye

- Ectopic bruise is also known as percolated bruise or migratory contusion.
- Blood will track along the fascial planes or between muscle layers which form the least resistance and may appear where the tissue layers become superficial. E.g.:
  - Blunt trauma to the forehead may lead to gravitating of blood around the eye and cause black eye.
  - Black eye caused by the fracture of anterior cranial fossa.
  - Bruise in the neck in case of fracture of jaw bone.
  - Bruise in the thigh due to fracture of pelvis.
  - Fracture of femur may cause bruise over outer aspect of lower thigh.
  - A blow on the upper thigh may cause a bruise above the knee.
  - Impact over the calf may give rise to bruise over the ankle.

287. B. Nymphomania

- Satyriasis: Uncontrollable or excessive sexual desire in a man.
- Nymphomania: Excessive sexual desire and drive in females.
- Hybristophilia: Sexual arousal is obtained by being with a partner known to have committed an outrage, cheating, lying, known infidelities or crime, such as rape, murder, or armed robbery.
- Coprolalia: Sexual excitement is obtained by using obscene language.

288. C. Introduction of a cuffed endotracheal tube before lavage

- Gastric lavage is done by putting the head of the patient at a lower level than his feet so that the mouth is at a lower level than larynx, so that any fluid which may leak out through the sides of the tube will not trickle down into the larynx and trachea.
- Left lateral is the best position, so that the tip of the gastric contents in the greater curvature of the body can be sucked out.
- Introduction of a cuffed endotracheal tube before lavage seals the glottis, so that it prevents the aspiration.

289. D. Thin layer chromatography

Florence test:

- The stain is extracted by 1 % hydrochloric acid and a drop is placed on a glass slide.
- A drop of Florence solution (Postassium iodine, iodine and water) is allowed to run under the cover slip.
- If semen is present, dark-brown crystals of choline iodide appear immediately.
- They are rhombic crystals resembling haemin.
- A negative test means the fluid is not semen.

Barberio's test:

- A saturated aqueous or alcoholic solution of picric acid when added to spermatic fluid, produces yellow needle shaped rhombic crystals of spermine picrate.
- In Barberio's test, the presence of spermine in semen is detected.

The Acid phosphatase test:

- Acid phosphatase activity of human semen per ml is 340 - 360 Bodansky units or 2500 - 3500 Angstorm units.
- It is the most commonly used presumptive test for the detection of seminal fluid.
- The prostatic secretion element of seminal fluid contains a very much higher percentage of acid phosphatase.

Thin layer chromatography detects both choline and spermine in seminal stain.

290. D. Discontinuous injection and drainage

Method of injection for Embalming are:

- Continuous Injection and drainage: The arterial injection is given continuously, against vein tube that is kept open throughout injection. The embalming time is much

shortened. Venous drainage and tissue saturation is poor. This method is least satisfactory.

- Continuous injection with disrupted drainage: The injection is made continuously with vein tube closed. The blood in the veins build up a resistance for the arterial flow which helps in the better diffusion of the fluid. Thick blood is discharged when the drain tube is opened. This method is better that continuous discharge and drainage.
- Alternate injection and drainage: The arterial fluid is injected for sometimes with the drain tube closed. The injection is stopped when the superficial veins swell, and the drain tube is opened. When the flow of blood from the drain tube stops, it is closed and the injection started. This process is repeated several times till the embalming is complete.
- Discontinuous injection and drainage: This consists of repeated arterial injection of small quantities at two hour intervals. The total quantity of injection fluid is in excess of ordinary injection done at a tie. The injection is continued for three ir four times. The venous drain tube which is kept closed is opened a little before and kept open a little after starting another dose of injection. **This is the best method.**

291. C. 20 weeks

- The purview of MTP ACT 1971 is up to 20 weeks of pregnancy.
- If the period of pregnancy is below 12 weeks, it can be terminated on the opinion of a single doctor.
- If the period of pregnancy is between 12 and 20 weeks, two doctors must agree that there is an indication.

292. C. 80 mg%

- When the jerking movement of the eyeball is in the direction of the gaze and independent of the position of the head, it is known as alcohol gaze nystagmus and appears at blood levels of 40 to 100 mg% (Average 80 mg%).
- 30 mg%: Maximum Blood Alcohol Level permissible for a driver while driving as per Indian Motor Vehicle Act.
- 50 mg%: Reaction time is impaired.
- 150 mg% or 0 .15%: Critical level of alcohol.
- 400mg% and above: Coma, and Death.
- It is said that consumption of 150-250ml of absolute alcohol in 1 hour is fatal

293. B. Calcium gluconate

- Potassium permanganate in a dilution of 1:5000 is most commonly used solution for gastric lavage as an oxidizing agent.
- Calcium gluconate is an antidote for oxalic acid
- Aluminium hydroxide is given as an antidote for mineral acids.
- In case of ingestion of cyanide, stomach wash is preferably given with 5% sodium thiosulphate solution.
- Antidotes for cyanide are,
  - Amyl nitrite is used by inhalation.
  - Sodium nitrite is given I.V.
  - Sodium thiosulphate in 50% solution I.V. - converts cyanide to non-toxic thiocyanates.
  - 4-dimethylaminophenol
  - Alpha-ketoglutaric acid
  - Dicobalt edetate.
  - Para-Amino Propiophenone (PAPP)
  - Hydroxocobalamine (Vitamin B_{12} precursor) etc.

294. D. H_2S

- Dangerous Japanese 'Detergent Suicide' Technique (Detergent or chemical suicide) is a suicide technique that mixes household chemicals to produce a deadly hydrogen sulphide gas in cars, closets or other enclosed spaces.
- Mixing of these detergents and chemicals liberate Hydrogen sulphide (minly) and other poisonous gases.

295. B. Hypothermia

Paradoxical undressing:

- It is a term for a phenomenon frequently seen in cases of lethal hypothermia.
- Shortly before death, the person will remove all their clothes, as if they were burning up, when in fact they are freezing.
- Because of this, people who have frozen to death are often found naked and are misidentified as victims of a violent crime.
- The reason for this paradoxical behaviour seems to be the effect of a cold-induced paralysis of the nerves in the vessel walls, which leads to a vasodilatation, giving a feeling of warmth.

296. D. No such limit

- As per Indian Railway's Act, Section 168 - Provision with respect to commission of offence by the children of acts endangering safety of person travelling on railway.-

(1)If a person under the age of twelve years is guilty of any of the offences under sections 150 to 154, the court convicting him may require the father or guardian of such person to execute, within such time as the court may fix, a bond for such amount and for such period as the court may direct for the good conduct of such person.

(2)The amount of the bond, if forfeited, shall be recoverable by the court as if it were a fine imposed by itself.

(3)If a father or guardian fails to execute a bond under sub- section (1) within the time fixed by the court, he shall be punishable with fine which may extend to fifty rupees.

297. A. Any part of living child comes out

- A child is live born according to English law when, after complete extrusion from the mother, irrespective of the attachment or severance of the cord, it exhibits some signs of life iike crying, movements of limbs, twitching of eye lids, respirations and pulsation.
- In India, if any part of a living child had been brought forth, though the child may not have breathed or been completely born =, it constitutes live birth. The evidences in respect of live-birth or circumstantial and from post mortem examination.

298. B. Accused in Impotent

Section 497 IPC. Adultery.– Whoever has sexual intercourse with a person who is and whom he knows or has reason to believe to be the wife of another man, without the consent or connivance of that man, such **sexual intercourse** not amounting to the offence of rape, is guilty of the offence of adultery, and shall be punished with imprisonment of either description for a term which may extend to five years, or with fine, or with both. In such case the wife shall not be punishable as an abettor.

As an impotent cannot have sexual intercourse, it can be a defense for adultery.

299. C. 25% more

A smaller volume of distribution for ethanol in women, a faster and a more variable absorption from the gut, a lower activity of gastric ADH enzyme, a faster hepatic clearance, a higher concentration of acetaldehyde and poor solubility in body fat are physiological factors due to which females of the same body weight will have a higher (25% higher) blood alcohol concentration for the same amount of drink, as their aqueous compartment is smaller.

300. C. 4 days

- Contraction of the umbilical arteries start in about 10 hours and are completely closed by third day.
- The umbilical vein and ductus venous are closed on the 4^{th} day.
- The ductus arteriosus closed by 10^{th} day, and
- Foramen ovale closes by 2^{nd} or 3^{rd} month.

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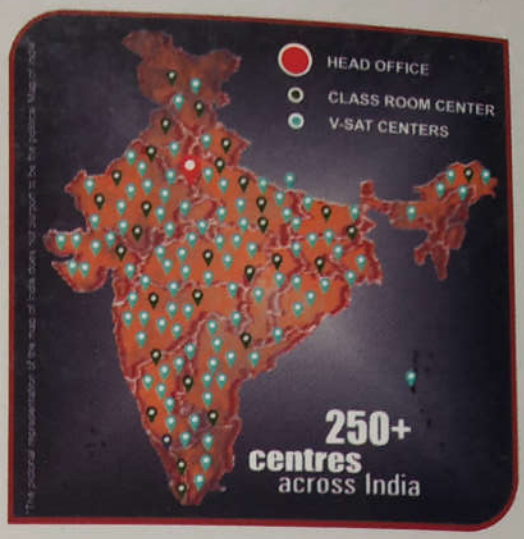

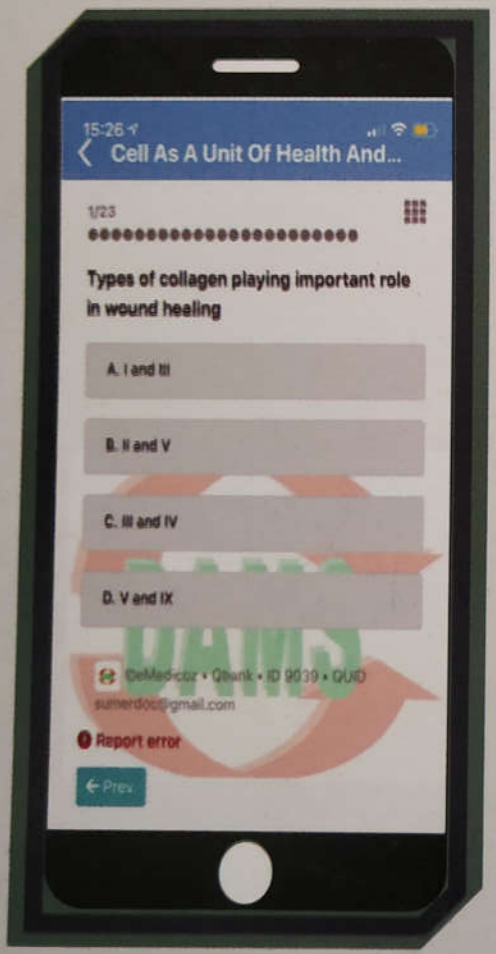

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